

# MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,  
Mining, Contracting, Engineering, Building, and General  
Business Interests of the South and Southwest

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ANY of the foremost iron and steel men of the country are deeply interested in the announcement made in the Manufacturers Record last week that the next meeting of the American Iron and Steel Institute will be held in Birmingham. Many of them are looking forward with eager interest to the opportunity of visiting the South and seeing for themselves its resources and its development. From a large number of these men interesting letters are published today telling of their enthusiasm about the proposed meeting in the South.

Another convention of great importance to the South in session this week at Hot Springs, Va., is covering the fertilizer industry in all its wide ramifications, and a report of this convention, as published in this issue, will prove interesting to all business men, for the fertilizer industry is the foundation of prosperous agriculture, and that is the foundation on which all other industries are builded.

These, however, are but two of the many interesting things to be found in this issue.

No man of intelligence can read the facts given today covering many phases of Southern activities and Southern potentialities without being more broadly informed about this section than he was before.

Alphabetical Index, Page 126.  
Classified Index, Pages 120 to 125.  
Classified Opportunities, Pages 78 and 79.

BALTIMORE, JULY 16, 1914

# CLINCHFIELD COAL

**CLEAN**



**LUMPY**

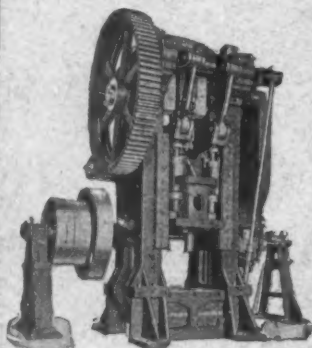
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No. 62, 6 cubic feet; No. 64, 8 cubic feet;  
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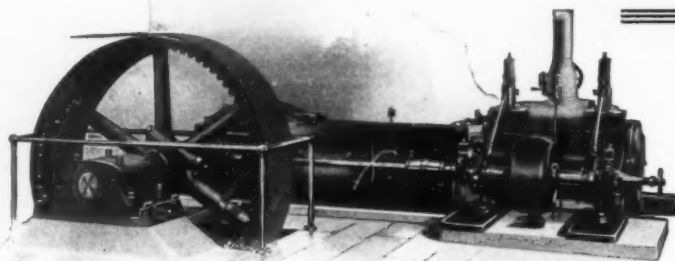
Send the dimensions of your new building to our service department, and let us show you how our window walls can be used to secure maximum lighting and ventilation. Catalogue "V" sent upon request.

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For Economy, Efficiency and Durability. Especially designed and built for the use of superheated steam.

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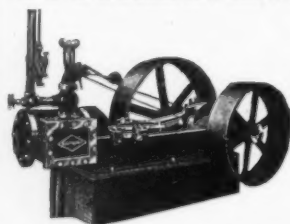
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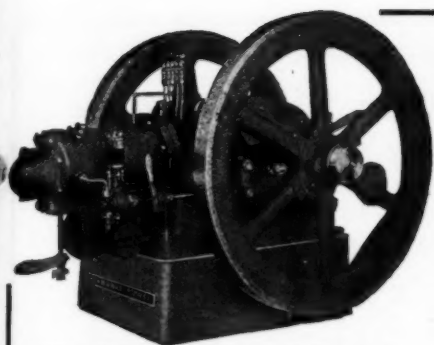
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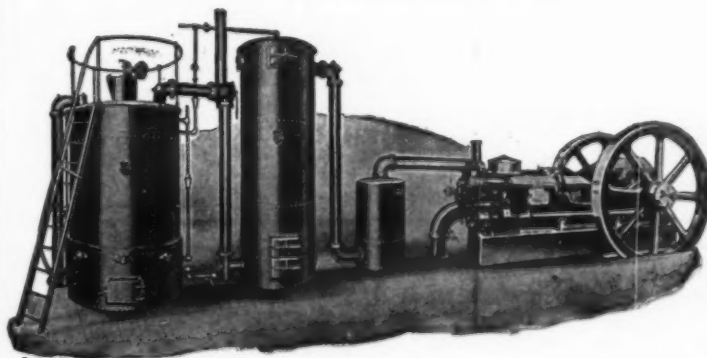
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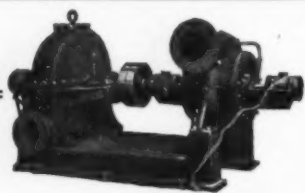
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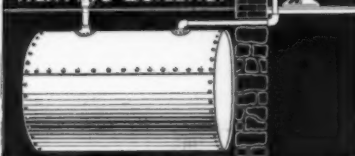


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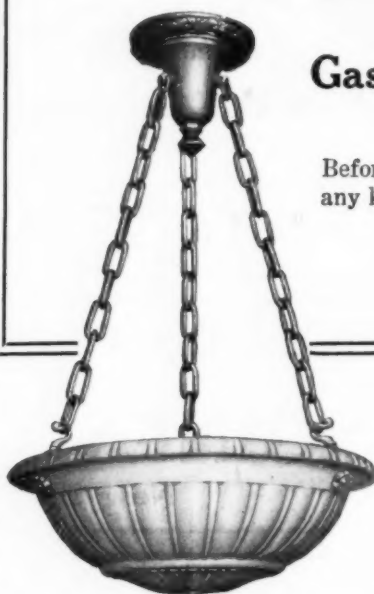
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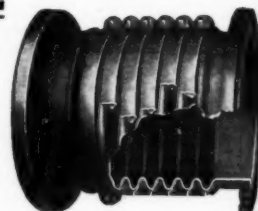
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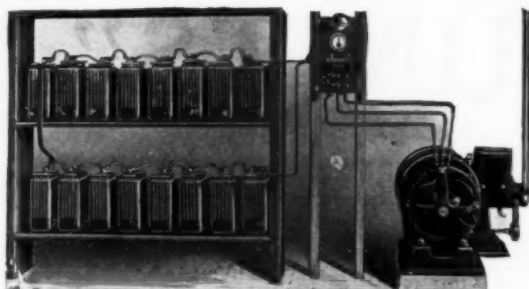
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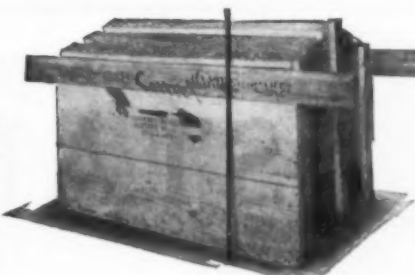
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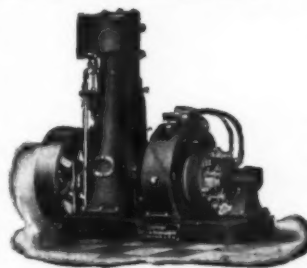
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Not all the power lost is lost between the switch-board and the motor. See if you are not losing power by purchasing a low grade fuel. Investigate the heating records of Consolidation Coals.

Georges Creek Big Vein Coal, Somerset Smokeless Coal, Fairmont Steam Gas Coal, Millers Creek Block Coal and Elkhorn Coking, By-Product and Gas Coal. Each with a distinct and tested heating value.

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Northwestern Fuel Co., Pioneer Press Bldg., St. Paul, Minn.

## Chief Advantages of the VOGT WATER TUBE BOILER



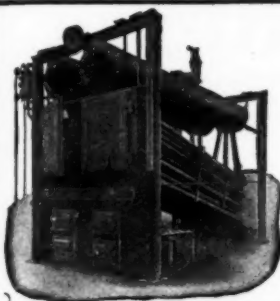
No flat stayed surfaces; no curved tubes; no multitude of hand hole plates; accessibility for cleaning and inspection; rapid circulation, both of water inside of tubes, as well as of the hot gases outside of tubes; complete combustion; dry steam; steadiness of Water Level; flexibility of construction; wrought steel construction throughout; safety, efficiency, durability.

Meets the demand for strictly safe, durable and efficient steam producer.

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Every essential to sustained high economy in steam generation is embodied in these boilers, making them of especial value under modern high efficiency industrial methods. For 45 years the Root Boiler has been the only True Sectional Water Tube Boiler.

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Pumps, Heaters, Injectors, Engine Supplies, and Repairs for Mills, Hotels, Public Works. Try

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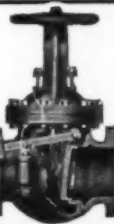
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Can be attached to Locomotive.

**SELF-ACTING INJECTOR** The only injector for Lumber Mills and Logging Roads



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Your entire plant tied up. You can insure against this and at the same time increase the steaming of your boilers—bringing the plant to its greatest efficiency by installing the tested and superior.

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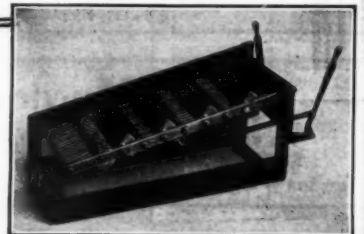
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### HUBER HAND STOKER

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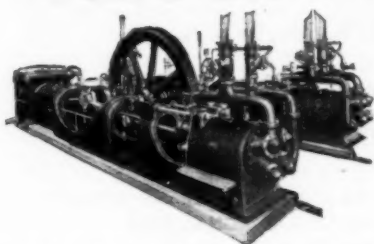
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## You Are Secured



Against the costly shut-downs of the midsummer rush by our methods of manufacture, large factory, experienced engineers, modern shop tools and highest class materials.

These combined, produce a refrigerating machine that is right in design, right in

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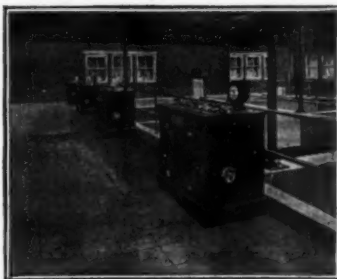
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We build Filters and Softeners for any purpose and of any capacity.

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The complete lubrication of textile, cottonseed-oil mills, sugar factories and industrial plants, large and small, can be secured with the highest efficiency and at a low cost with

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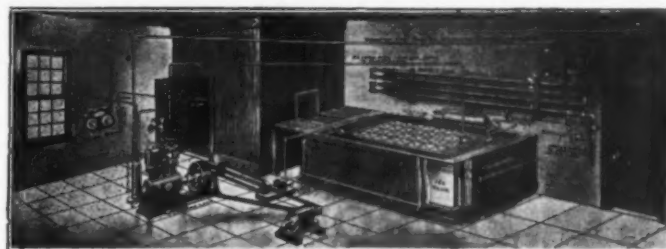
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Many of these machines are in operation in the SOUTH in Mills and other Manufacturing Establishments to supply ICE for local requirements. They can be run from line shaft at small expense, and will soon pay first cost. Machines of any capacity for MAKING ICE or for the COOLING OF COLD STORAGE ROOMS, LIQUIDS OR DRINKING WATER. Over 20 years on the market. Illustrated Catalogue and Reference List upon request.

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Our "come-back" business is a big business in itself and positively proves we have given a big value.

Write for an estimate on your requirements.

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Refrigerating and Ice Making Machines,

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ICE-MAKING AND  
REFRIGERATING MACHINERY

Corliss Engines

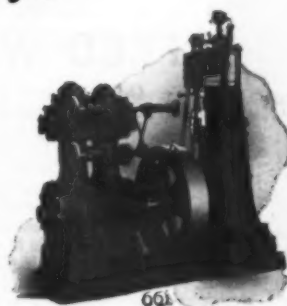
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## Mechanical Refrigeration Pays

There is no longer any doubt on this point. And then it is more sanitary, more reliable, and more satisfactory in every way.

Retail Dealers in Perishable Goods, Meat Markets, Creameries and Ice Cream Factories, are everywhere reaping handsome profits by installing modern Refrigerating Plants.



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Plants from 1/2-ton Refrigerating Capacity and upwards.

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Ice-Making and Refrigerating Machinery exclusively

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REFINERS OF  
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## PETROLEUM

HIGH GRADE

Engine Gasoline  
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PERFECTION VALVE and SIGNAL OILS  
are standard the world over

ELECTRIC RAILWAY LUBRICATION A SPECIALTY

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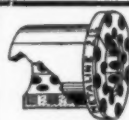
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Most Reliable  
Least Wearing  
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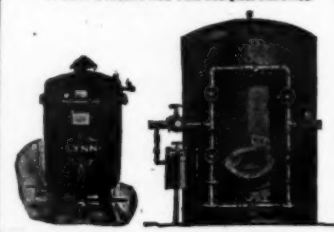
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PURE, CLEAR WATER  
RE-FILTER SWIMMING POOLS  
Water Filters for All Requirements



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## THE OTIS TUBULAR FEED WATER HEATER

Oil Separator and Purifier does not scale. The  
exhaust steam enters and leaves the heater at the  
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therefore the tubes cannot fill up with scale, as  
they do in other water tube heaters. This provides  
an oil separator and cool settling chamber in the  
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A manhole in the sides enables you to easily and  
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Is a Necessity for  
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An unfailing supply at the right temperature is furnished by the  
**GOUBERT HOT WATER GENERATOR**

The water tubes are surrounded on all sides by live or exhaust steam.  
No cold water can pass out. Thermostat control if desired.

Write for Bulletin 209

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High Grade Firebrick  
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are prepared to furnish estimates on  
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BRANDS:

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Capacity 20,000,000 Per Year

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## Machinery Phosphate Plumbing and Mill Supplies

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## LEVIATHAN or ANACONDA

can't "make good." If you need a belt that slips you want some other make.

Under all other conditions Leviathan or Anaconda will do your work in a way that will show profit over any other kind of belt.

An order for a 26-inch 8-ply elevator belt was given us a few days ago because the other LEVIATHAN in that plant has never stretched. This is not a happening. It is a LEVIATHAN and ANACONDA habit.

Letting us show you means dollars to you.

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## This Rope Is Built to Withstand Wear

You want more than mere strength in Transmission Rope. You must have wearing quality woven in with every yarn and strand of it.

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### AMERICAN TRANSMISSION ROPE

It shows how the inner yarns and core are laid with a special lubricant that permeates all the fibers and thus overcomes internal wear. It never leaves the rope, and as long as the yarns and strands remain together they are kept soft and pliable.

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Straight or Curved, furnished with Machine Cut Teeth for any Pitch and Face and any Length. We also make Cut Gears of all descriptions.

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Transmits more power than any other Canvas Stitched. Fully Guaranteed.  
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### GILBERT WOOD SPLIT PULLEYS

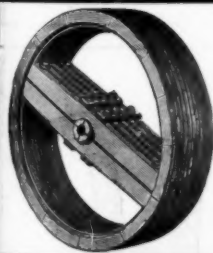
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## SPARTAN Steamproof Leather Belting

All that its name implies and then some—the ONE belt for hard and unusual drives—the harder the better. Send for Spartan Booklet—we can interest you if you will let us.

The Graton & Knight Mfg. Co.  
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*The Reeves*

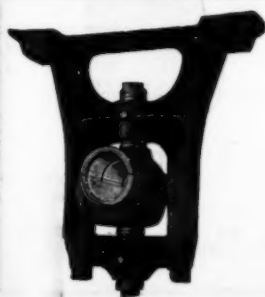
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It will do more work, it will pull a larger load, it is stronger than a steel or iron pulley.

It is built to pull all that any double belt will drive; to run at high speed; to stand heat or cold, moisture or dryness.

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REEVES PULLEY CO., 1224 Record St., COLUMBUS, IND. Chicago Branch, Clinton and Monroe Sts.

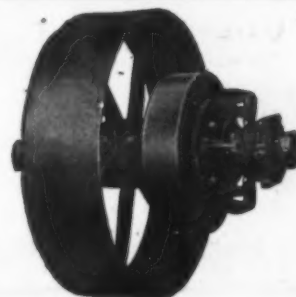


### T. B. WOODS SONS CO., CHAMBERSBURG, PA.

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### Modern and Approved Appliances for the Transmission of Power

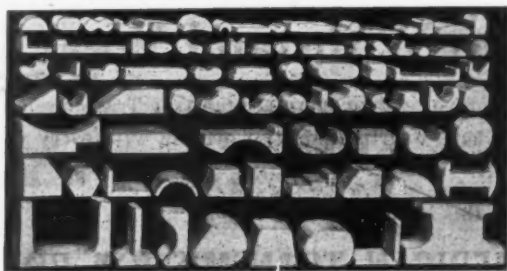
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Rounds, Flats, Squares and Hexagons of the better grades carried in stock at our convenient warehouses.



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also Turned and Polished

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OUR Trade Mark is our hobby, but our real work is making the most successful belting ever manufactured and sold under this Trade Mark.



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ESTABLISHED 1868

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### Get this Book on Transmission



If you have no Rope Transmission you should know *why* it is best. If you have Rope Transmission you'll want to know why *Columbian Manila Transmission Rope* is best. The book is FREE.

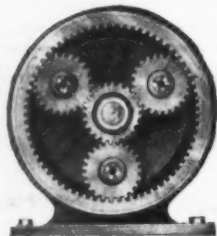
**COLUMBIAN ROPE COMPANY**  
600-625 Genesee St. AUBURN, N. Y.

### MACHINERY and SUPPLIES

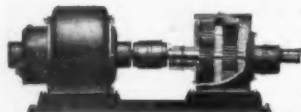
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SMITH-COURTNEY CO. - RICHMOND, VA.

## O. K. SPEED REDUCING TRANSMISSIONS

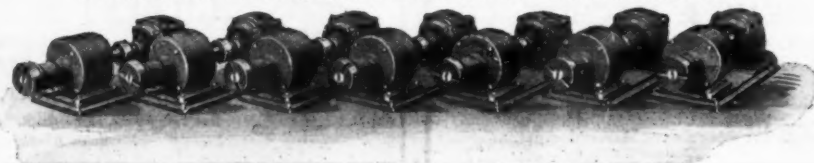
GIVE RESULTS WHERE OTHER DRIVES FAIL  
DESIGNED FOR HEAVY DUTY AND CONTINUOUS SERVICE  
A HIGHLY EFFICIENT PLANETARY TRANSMISSION



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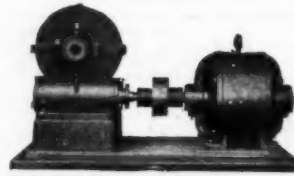
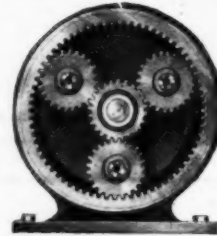
O. K. REDUCERS ARE MADE IN RATIOS AS HIGH AS 1600:1 OR MORE.



The above cut represents seven Model B Speed Reducing Outfits: ratio, 25.6:1; Direct connected to General Electric Motors, 5 H. P., 1140 R. P. M., giving a driven speed of 45 R. P. M. Motors and reducers are mounted on cast iron bedplates. The above outfits operate feed driers in a large cereal plant.

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1124 W. Monroe Street CHICAGO, ILL.

SPECIALISTS IN CUT GEARS. We are fully equipped with the most modern machinery for the Accurate production of Cut Gears.



INVESTIGATE BEFORE DECIDING ON YOUR PLANT EQUIPMENT.

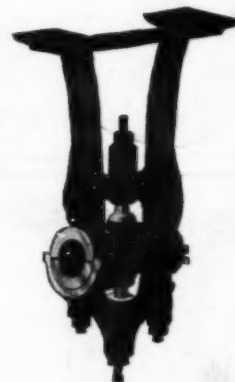
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We manufacture and carry in stock a complete line of Ring Oiling and Wick Oiling Rigid Pillow Blocks, Ball and Socket Pillow Blocks, Single Brace Hangers, Double Brace Hangers, Adjustable Post Hangers, Rigid Post Hangers and Special Floor Stands.

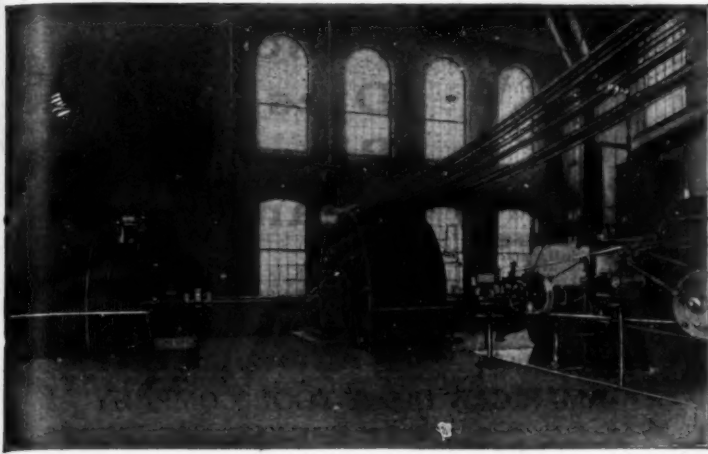
Full descriptive matter and prices in our  
Catalogue No. 26. Have you a copy?

**Medart Patent Pulley Company**  
ST. LOUIS, MO.

Steel Rim, Cast Iron and Wood Pulleys, Shafting, Hangers, Gears, Sprockets, Clutches, Rope Sheaves, Etc.







### "Plymouth Transmission Rope Outlasts Them All"

comments a Southern buyer of mill supplies. And isn't this the vital point in all rope transmission problems—the *whole* question of economical transmission? Isn't "lasting power" the basis on which you select the rope you use? Manufacturers who have tested Plymouth Transmission rope say it *can't* be beaten.

Our experts will advise you on any installation matters, without cost. Plymouth Transmission booklet, sent free on request, may show you how to save money on your rope.

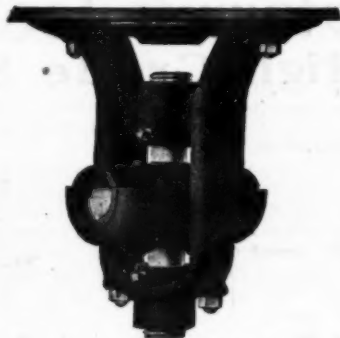


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**PLYMOUTH CORDAGE CO.**  
NO. PLYMOUTH, MASS.

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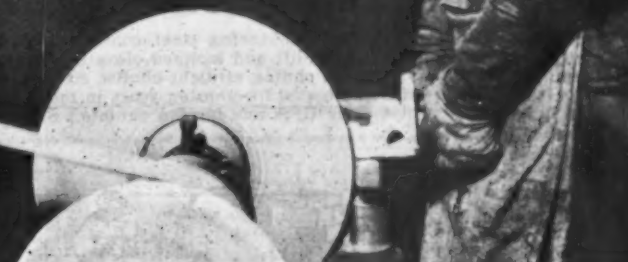


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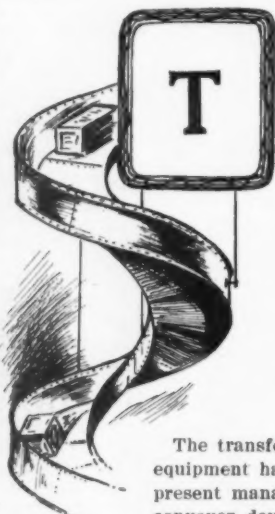
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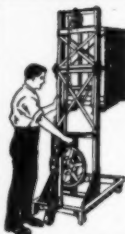


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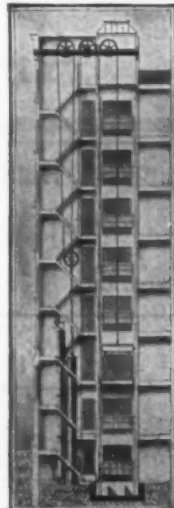


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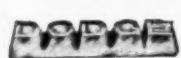
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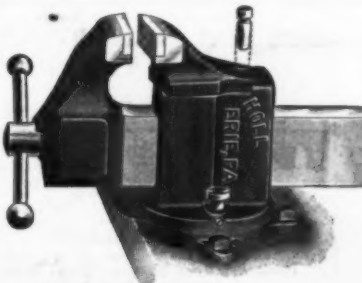
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Figure to see how we can give the buyer the  
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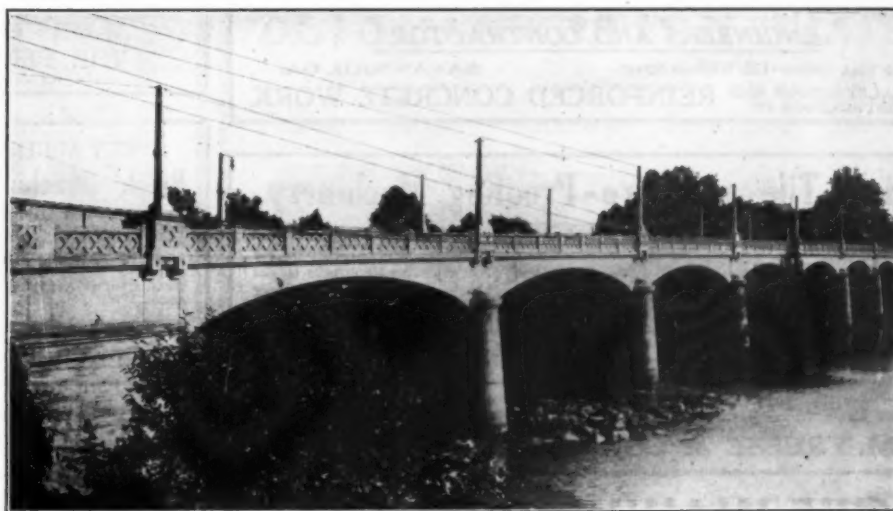
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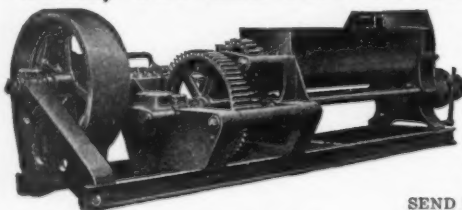
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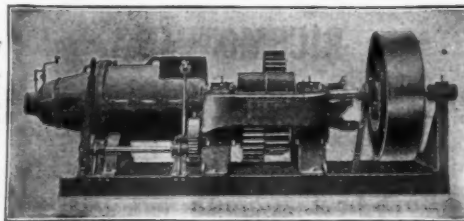
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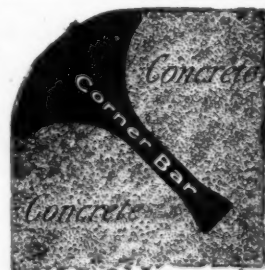
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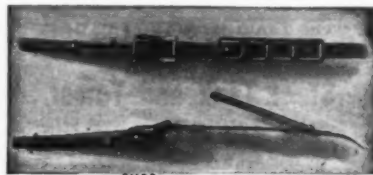
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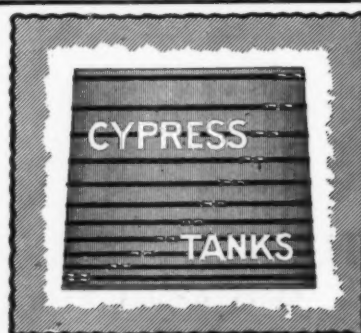
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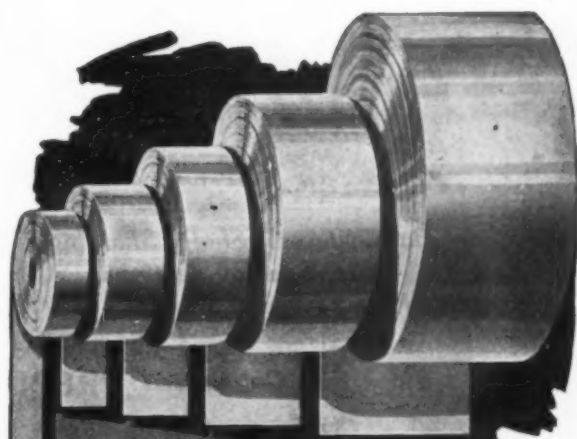
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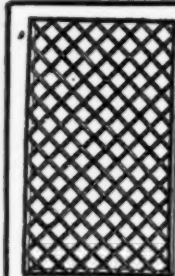
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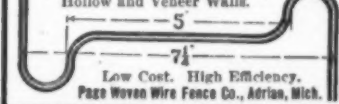
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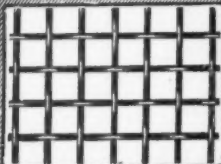
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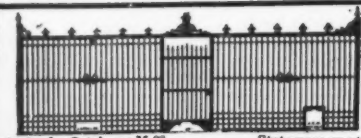
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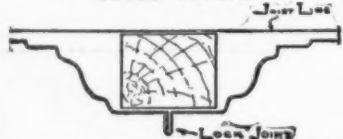
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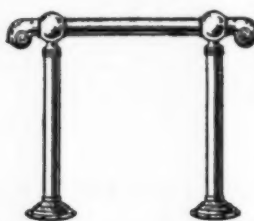
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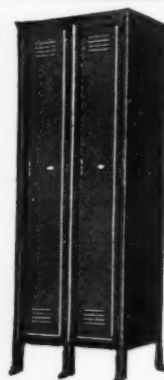
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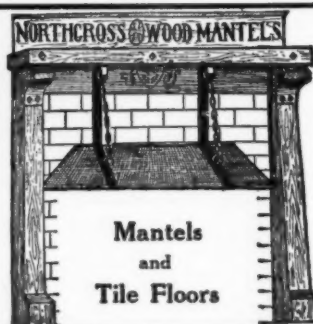
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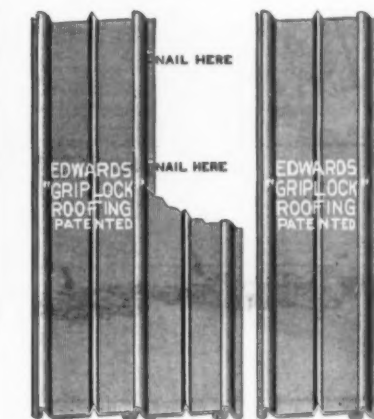
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Record Bldg., Easton, Pa.

Quarries, Bangor, Pa.

### Edwards Patented "Griplock" Roofing

Made from Best Quality Open Hearth Steel  
Furnished Painted or "Tightcote" Galvanized



No Wood Sticks Needed  
Not a Single Nail Head Exposed

EDWARDS PATENTED "GRIPLOCK" ROOFING is the final word in Metal Roofing of this style.

We put into it everything we have learned in over 30 years at the School of Sheet Metal Experience.

The patented "Griplock" device absolutely covers all nail heads. Rain or snow cannot get to them and start corrosion. Each section is Griplocked to the next, rigidly and "for keeps," yet with scientific provision for expansion and contraction. You do not need a single wood stick in a square mile of patented "Griplock." That cuts laying cost right in two. That economy feature, apart from the surpassing quality of highest grade, Open Hearth Steel used in pat-

ented "Griplock" Roofing will surely interest you.

In sheets 5 to 12 feet long, with 24 inch covering width—Painted or "Tightcote" Galvanized.

Samples and Prices on Request

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Metal Shingles, Metal Ceilings, Portable Steel Build-  
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"A product without a peer"

# The Apollo



# Trade Mark

## Conspicuous Since 1884

Insist that this brand be stenciled on the *APOLLO BEST BLOOM Galvanized Sheets* which you buy.

Upwards of 450,000 tons of Apollo Best Bloom Galvanized consumed annually.

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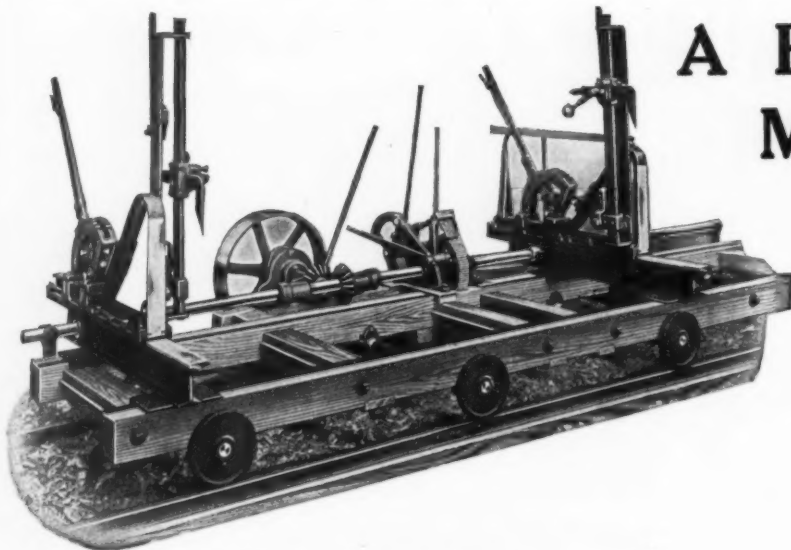
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Size "V" Saw Mill Carriage.

## A Heavy Duty Knight Mill for Big Timber

Built exceptionally strong to produce the maximum daily output and stand up under the most severe conditions. Equipped throughout with those features that have placed Knight sawmill machinery in the foreranks in all the timber sections of this country, this mill will meet your requirements in every particular.

### Buy a Mill with Larger Profits Assured

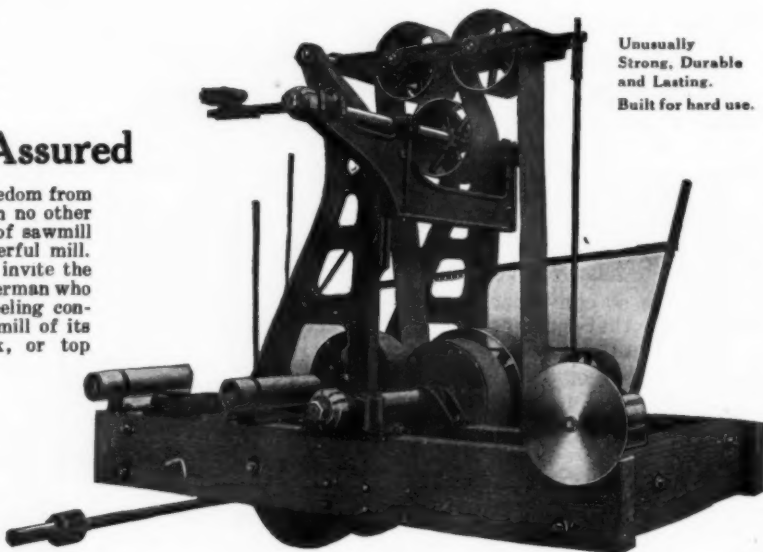
in so far as reliable construction, rated capacity, durability and freedom from breakdowns is concerned, and you will have nothing to regret. In no other mill of our make is our policy to manufacture only the highest class of sawmill machinery more in evidence than right here in this unusually powerful mill. Every part subjected to hard wear is especially reinforced, and we invite the most searching investigation or comparison of any experienced lumberman who may be considering a new plant or the refitting of his present mill, feeling confident that in this size "V" mill we have outdistanced every other mill of its kind on the market. Can be furnished with single belt feed husk, or top saw rig, with reversed belted top saw.

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**Knight Manufacturing Co.**

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Unusually Strong, Durable and Lasting. Built for hard use.

# LANE SAW MILLS

## are the World's Standard

They make the most and best lumber with lowest operating expenses and greatest real saving in stock. They handle thin saws successfully and cut with absolute accuracy. No matter what your work may demand, we have a Mill that will do it. We make a large line of machinery, including

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THE LANE GUARANTEE IS BACK OF IT ALL.

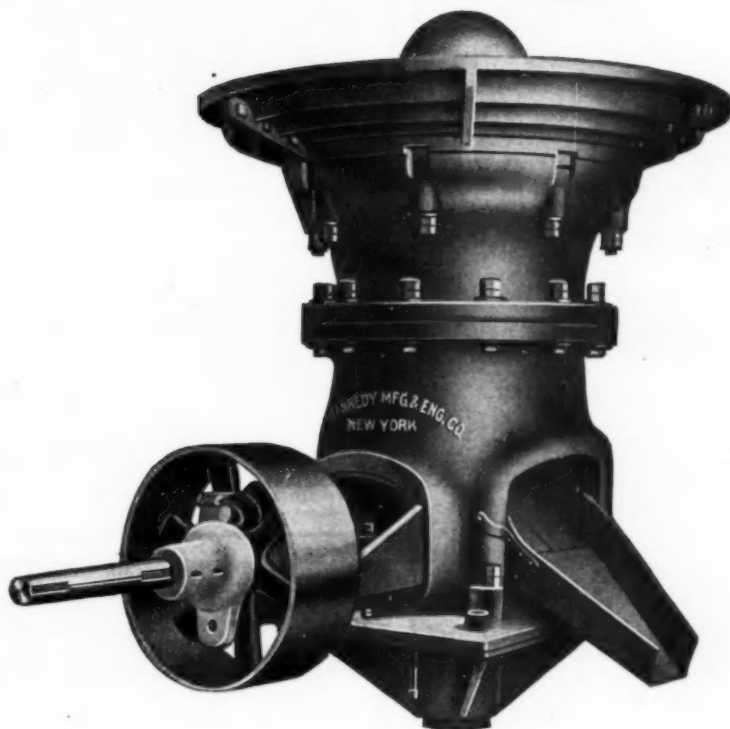
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**LANE MANUFACTURING COMPANY**  
MONTPELIER, VERMONT.



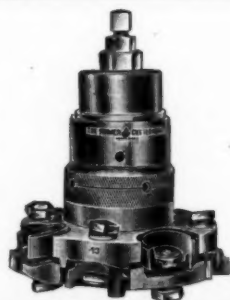
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**W.E. AUSTIN MACHINERY CO.**  
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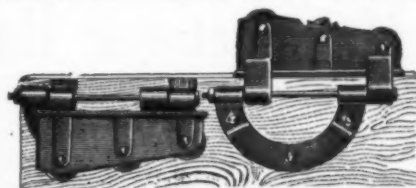


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**SOULE STEAM FEEDS  
DOGS, LUMBER BUGGIES, ETC.**

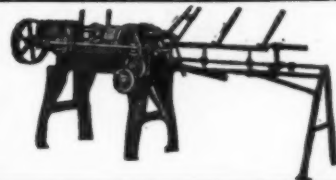
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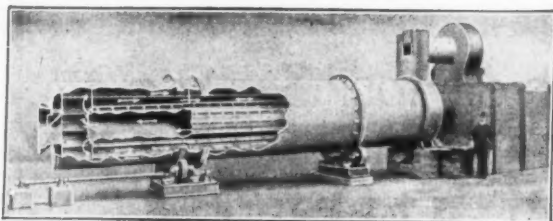
Our engineers can solve your drying problem.

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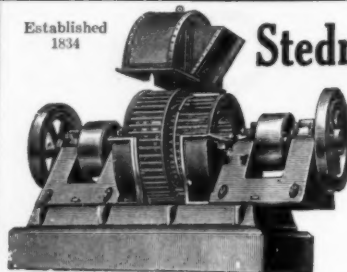
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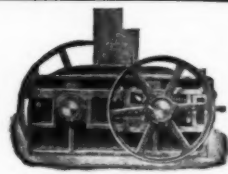


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For All Materials.

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Way to Get Out

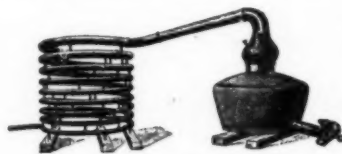
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WE RECOMMEND OUR

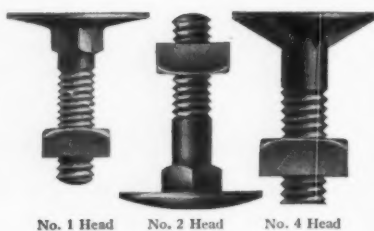
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THE COST IS NOMINAL. NO EXPENSE FOR KILNS. NO FIRE RISK.  
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Upson Elevator Bolts stand alone in accuracy of heading, pointing, threading, finish and all other points of high quality.

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**Bolts    Nuts    Rivets**  
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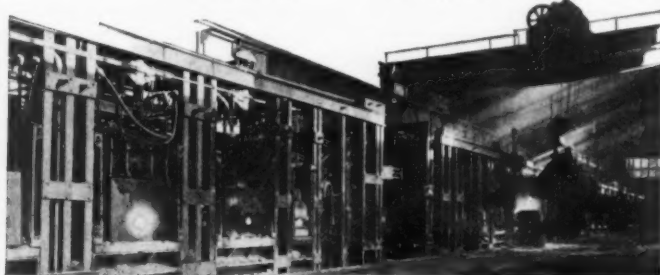
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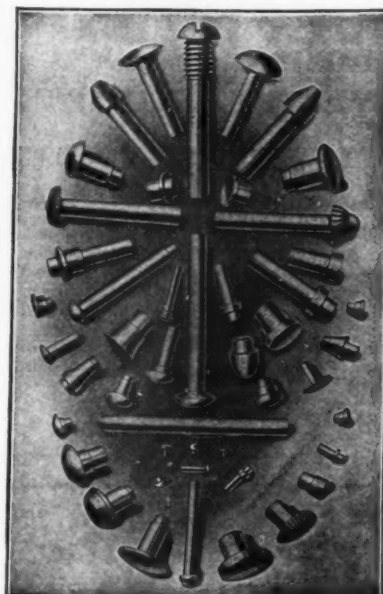
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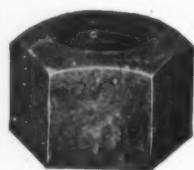
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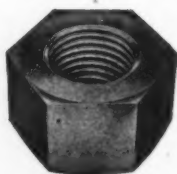


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FOR EVERY PURPOSE

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Weighting from 1 lb. to 500 lbs. each

Suitable for Dogs, Clamps, Wheels, Pinions and other castings where strength is required.  
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Is practically automatic in operation;  
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from 1 to 1000 lbs.

"SALAMANDRINE" STEEL POTS  
for Lead, Annealing and Galvanizing

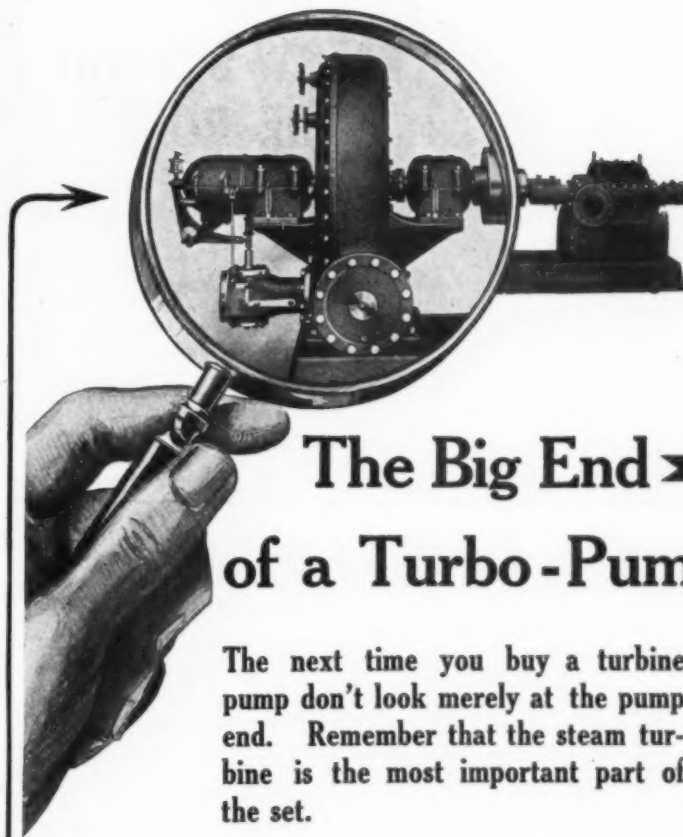
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The next time you buy a turbine pump don't look merely at the pump end. Remember that the steam turbine is the most important part of the set.

The Sturtevant Steam Turbine is in constant demand for driving pumps. In fact, the demand has been so persistent for a Sturtevant-Driven Pump with a Sturtevant Guarantee behind it that we now supply and guarantee the complete units.

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Are furnished with any standard make of pump which we feel we can recommend. In case you have no preference, our engineers will choose a pump to fit the work. Our guarantee covers the whole set.

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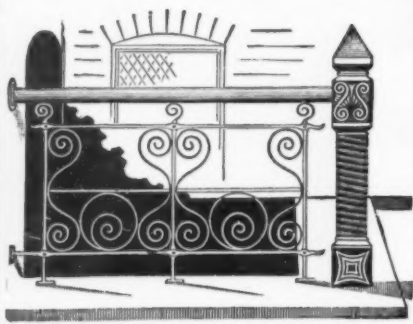
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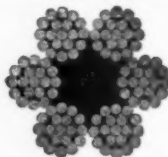
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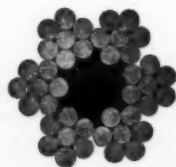
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# MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

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## MANUFACTURE OF FERTILIZERS AND ITS WIDE RAMIFICATIONS.

THE foundation industry of the world is agriculture. All other industries have been made possible by its existence. The foundation of successful agriculture is the fertilizer business, taken in all of its wide ramifications, from the fertilization of the soil by proper crop rotation, and by barnyard manure, to the vast industry which has been created in the manufacture of commercial fertilizers.

Gathered at Hot Springs, Va., this week are many of the foremost fertilizer-manufacturing leaders of the country. They represent a business upon which all other industries are staked, for they represent the industry which, in one form or another, takes into account the restoration of exhausted soils and the increase of yield per acre. They are the men who make possible the growing of two blades of grass where not even one grew before. They are not merely makers and sellers of a commercial product; they are all more or less carrying on a broad, intelligent campaign to educate the farmers of the land in the best methods for the use of fertilizers and as to the best crops to be grown to secure the largest results.

Much of the work of the fertilizer people of the country has been of a very high educational order. Every intelligent salesman which they send out, and there are many such, like the professors in agricultural colleges, is a student of soil restoration and is a preacher to the people of the gospel of better cultivation. It is an interesting fact that in this industry, upon which the prosperity of agriculture depends, upon which the increasing supply of food-stuffs needed for mankind must be founded, is carried on to a larger extent and more scientifically in the South than anywhere else in the United States. Here is the great center of the fertilizer industry, and here, as nowhere else in this or any other land to the same extent, are found all of the raw materials which make possible the development of the fertilizer industry. Here is the cottonseed crop of 7,000,000 tons annually, with its by-products that enter into the making of fertilizer. Here are pyrites mines and sulphur mines, the latter controlling the sulphur market of the world. Here is the chief center of phosphate rock production, and here, too, are found other materials that enter into the manufacture of commercial fertilizers. For the assembling of materials for the manufacture of fertilizer the South has been favored as no other part of the land, and for this industry it has a combination of advantages not possessed elsewhere.

The fertilizer industry as conducted in the South has a vital relation not only to agriculture, but to the cottonseed-oil business, to pyrites mining, to sulphur mining, to the importation of pyrites, to the

manufacture of fertilizer ingredients from the basic slag of the steel works of the South, to the output of by-product coke ovens, and to the utilization of water-powers for the fixation of nitrates from the atmosphere. All these things are vitally important to the wide ramification of the industrial life of the South. Because of these facts the meeting of the fertilizer people of the country at Hot Springs is of broad interest to men of all lines of industry, and the report of the meeting as presented elsewhere in this issue is well worth a careful study by manufacturers in other lines, by bankers, by merchants, by professional men, and, indeed, by every intelligent man in every walk of life.

## SOUTHERN COTTON MILL TAKINGS.

IT begins to appear likely that the cotton mills in cotton-growing States of the South will end the current commercial year with a record in cotton takings beyond 3,000,000 bales, a record that the mills of the rest of the country have never made and one that all the mills of the country, including those of the South, did not reach until 1898, just sixteen years ago. Up to last Friday the Southern mills had taken 2,919,316 bales, a quantity within 50,243 bales of the total takings by such mills in the year ended August 31, 1913. In that year, between July 10 and August 31, the Southern mills took 255,948 bales, making the total takings for the year 2,969,559 bales. If as many bales are taken during the rest of the present year as were taken in the same period last year, the total takings by Southern mills will be 3,175,264 bales. But up to July 10 the takings by Southern mills this year were 205,705 bales more than in the same period of 1913, an increase of 7.5 per cent. Should a like rate of increase be maintained this year, the total takings in the Southern cotton-growing States will be 3,194,461 bales, indicating takings by all the mills of the country amounting to 5,000,000 bales.

The advance made in takings by Southern mills from 1,919,252 bales in 1904 to more than 3,000,000 bales in 1914 is but a part of the interesting story of the development of the textile interests of that section from the 179,000 bales taken in 1880, at the time of the revival of the industry after twenty years of wreck and depression, to the 1,000,000-bale mark in 1897, on to exceeding the takings by mills in the rest of the country in 1903 for the first time, with that record repeated several times since, and on to this year's record. But, in spite of that record, much is still to be done before the South can be enjoying to the full its wonderful opportunities in the textile industry. So far this year the total supply of commercial cotton has been 14,673,820 bales, an increase of 672,536 bales, or 4.6 per cent. over the same period last year. But of that commercial crop the Southern mills, while taking nearly 54 per cent. of the total American takings, have taken only 19.9 per cent. Three times as many bales of Southern-grown cotton have been sent to foreign lands this year than have been taken by Southern mills, Great Britain alone having taken 462,655 more bales than they. When the reverse shall be the rule, when the South shall be spinning three times as much cotton annually as it exports, when 10,000,000 bales instead of 3,000,000 bales are its record, then the South will be approaching its correct status as a cotton manufacturer. It is consuming now three times as much cotton as in 1897. Is there not, in this day of realization of the folly of marketing the fiber as raw material instead of as finished products, the spur in the present situation to advance the textile industry of the South nearer the point where 10,000,000 bales will be called for annually by its mills?

## BUSINESS MAY REVIVE BY NATURE'S HELP DESPITE POLITICAL PANACEAS.

NATURE is trying to ring out the old and to ring in the new; to ring out the old months and years of doubt and uncertainty and depression in business, and to ring in new years of activity and prosperity.

Politicians may load the country with burdens too heavy to be borne, and pile on that which seems to be the last straw to break the overworn back of business, but nature comes with its wonderful power of healing and of strength-giving.

What the pure air of the ocean side or the mountain may be to the invalid, bringing increasing strength with every breath, the marvelous crops which are being gathered and which are promised for the later months of the year should be to the business interests of the country.

The man of inherent strength of constitution can sometimes take many liberties with his health and do many things that menace life itself, and yet when passing through the invalidism which these things have brought upon him may rapidly regain full strength and activity. The inherent business constitution of the country is sound, resting on a foundation of natural advantages unmatched on earth and developed by people of greater resourcefulness and greater virility in the large than any other people.

We may thus be able to stand all of the unwise legislation which would destroy a weaker country—one having fewer natural advantages and less strength in its business life. We may, indeed, recover our business strength despite the political quacks who seek to palm off upon the national patient every cure-all that their inventive genius can devise. Kind nature comes to the rescue and gives to business life the invigorating power of the most nourishing food—crops running into the billions of bushels of grain, into relatively as great a yield of fruit and vegetables, and in the promise of a cotton crop which, if not quite equal to the world's demands, will yield to the producers a larger income than if they had raised a few million bales in excess of the world's requirements.

With an estimated yield of 930,000,000 bushels of wheat, exceeding by 168,000,000 bushels the crop of last year; with an estimate, although too early to be safe, of over 2,800,000,000 bushels of corn, or about 400,000,000 bushels in excess of last year; with a large increase in oats and in other things; with an amazing combination of favorable conditions for giving health to the business invalid, there ought to be rapid recovery.

Of necessity the railroads will be compelled to put into operation every piece of rolling stock available. Indeed, many a locomotive and many a car that might under other conditions go to the scrap heap will have to be made to do its best possible service this year. Despite the fact that the railroads have by national legislation been deprived of the nourishment needed for their health and strength, and have been forced in so many ways to economize and to save, better conditions are in sight for them by reason of the enormous freight movement which the crops assure. And money must be found in one way or another for a great increase in their expenditures for more equipment and for better roadbeds. The moment that the railroads are in shape to begin an active buying campaign there will come a quick revival of iron and steel and lumber and other interests dependent upon them for a large part of their output. And then with big crops giving prosperity on the farms, with increasing activity in railroad construction work and in railroad equipment buying, we will have turned the corner and business will begin to revive. Then once more the business constitution of the country will assert its power over inva-

lidism, over back-breaking experiments and over all the patent-medicine poisons which by political quacks have been poured into its system.

## RAILROAD REVENUES AND EXPENSES.

**A**N abstract of statistics of steam railroads in the United States for the year ended June 30, 1913, has been issued by the Interstate Commerce Commission, which, according to an unfortunate custom, due in part to the large amount of work necessary to digest the information received, is a full twelvemonth following the close of the year considered. The report from which the digest is prepared is made from the statements of companies each having operating revenues of more than \$100,000 per annum, and also of other companies owning property operated under lease or agreement by those carriers. All these roads under consideration comprise 244,418.5 miles of line operated, of which 11,163 miles are operated under trackage rights. Their total operating revenues for the year were \$3,125,135,798, which is an increase of \$298,177,432 as compared with the report for the fiscal year ended June 30, 1912, or something more than 10½ per cent., and their total operating expenses were \$2,169,968,924, an increase of \$210,874,266, or about 10½ per cent., by the corresponding comparison. Thus it will be observed that the contention of the railroads that operating expenses are increasing in greater ratio than operating revenue is sustained by these statistics of the Interstate Commerce Commission, although it must be remembered that in some parts of the country the increase in expenses is in much greater proportion than is indicated by these figures, which cover railroads in all parts of the United States. Moreover, these figures are more than a year old, and within the last twelve months this unfavorable condition has become more pronounced. Net operating revenue for the year ended June 30, 1913, was \$955,166,874, an increase of \$87,212,338, or a little more than 10 per cent. After adding a couple of millions of net revenue from outside operations, deducting taxes accrued, \$122,005,424; adding \$283,000,000 of other income, and then deducting various items, such as rents, interest, etc., \$629,706,398; dividends, \$241,750,512; appropriations for additions and betterments, \$48,022,688; miscellaneous appropriations, \$14,991,076, etc., there is left a balance to credit of profit and loss of \$183,705,547, or something less than 6 per cent. of the total operating revenues. Notwithstanding this addition, the profit and loss account actually shows a decrease in grand total as compared with the same time in the preceding year, being in 1913 \$1,071,740,473, as against \$1,078,765,200 in 1912, the decrease being due to encroachments upon surplus for dividends (over \$85,000,000), miscellaneous appropriations (\$68,723,482), etc.

A study of the costs of operation is interesting. Conducting transportation caused an expenditure of \$1,006,252,745, traffic expenses were \$62,850,113, and general expenses \$78,072,308. Maintenance of way and structures demanded \$421,232,395, and maintenance of equipment \$511,561,363. Operating expenses averaged \$8939 per mile of line operated. Equally interesting also is the study of sources from which the operating revenues were gathered. Freight yielded \$2,198,930,565, or more than 70 per cent. of the total, and passenger business produced \$695,987,817, or more than 22 per cent. of it. Other great sources were mails, \$50,789,212; express, \$79,717,266; switching, \$33,248,734; outside operations, \$31,628,843, etc.

There was a big increase in ton mileage, the total thereof being 301,398,752,108, which is a gain of 37,618,843,854 over 1912. The total number of tons of freight carried was 2,058,035,487, or 239,239,857 more than in the preceding year. The average number of tons of freight per train mile was something more than 445, an increase of 35 tons. Passenger mileage also increased heavily, the total being 34,575,872,980, or 1,536,762,172 more than in 1912. The total number of passengers carried was 1,033,679,680, an increase of 39,307,397. Average receipts per ton mile were 0.729 cent, as compared with 0.743 cent in 1912, a decrease of 0.014 cent. Average receipts per passenger per mile were 2.008 cents, as compared with 1.985 cents in 1912, an increase of 0.023 cent. The ratio of operating expenses to operating revenues

was 69.44 per cent., an increase of 0.41 per cent. as compared with the year previous.

There are many other interesting facts embodied in the abstract of the report, such as the total number of locomotives (63,378), total number of cars (2,445,508), etc., but the main facts displayed are that freight rates, as shown by the decrease in average receipts per ton per mile, are decreasing, while operating expenses are increasing in a larger ratio than revenues. These conclusions cannot be avoided, and the need of the railroads for careful and just consideration of their claims and their statements by the authorities is something which every fair-minded man will want, with the expectation that relief must be found so that the development of transportation facilities upon a scale commensurate with the growth of the country may proceed without hesitation.

## PATERNALISM IN LIMITING OKLAHOMA'S OIL PRODUCTION.

**A** COMBINATION to limit oil output, made by a large number of the producers in Oklahoma in co-operation with the State Corporation Commission, as published in detail in the MANUFACTURERS RECORD last week, raises some very interesting questions, one of which is as to whether this combination to restrict production is liable to prosecution under the law against restraint of trade or not. It is true that all of the producers in the combination are within one State, but they do an interstate business, and the pipe lines, which by decision of the State Corporation Commission are "relieved as common purchasers from taking the production of any new wells brought in on and after the first day of July, 1914," except under certain conditions named, are, according to the recent Supreme Court decision, common carriers, and, therefore, subject to regulation by the Interstate Commerce Commission.

The oil production of Oklahoma, which ten years ago was 1,366,000 barrels, has increased so rapidly that by 1913 the output was 62,500,000 barrels. It is estimated for the present year at 100,000,000 barrels. The output of oil has been more rapid than consumptive requirements, and the enormous increase of the present year, taken probably in connection with the general depression in business throughout the world, has resulted in a heavy decline in prices. Six months ago oil was selling at over a dollar a barrel in Oklahoma. Prices have recently dropped so rapidly that this figure has been cut in half, and yet even that price is much higher than the prices at which oil has sold for a large part of the time in Oklahoma since 1908.

Stimulated by the better prices prevailing during last year and the first part of this year, there has been an enormous expansion in well drilling and in the building of oil tanks. Some of the concerns in the Pittsburgh district engaged in supplying oil-drilling equipment and in tank building have been crowded to the limit of their capacity in order to meet the incessant demand from Oklahoma. The output of oil has increased more rapidly than tank facilities could be increased.

From such conditions of activity and prosperity in the Oklahoma oil trade there has come such a sudden slump, by reason of the heavy cut in prices, that the State, through the State Corporation Commission, working in connection with many of the producers, has undertaken to limit well drilling and to relieve pipe lines from the responsibility to purchase oil from new wells except on certain conditions.

How far paternalism in government can go to advantage is likely to be tested out as a result of this experiment. A year or two ago one of the leading men of Oklahoma said to the writer: "The people of Oklahoma, who have been drawn there from every section of the country, and, indeed, from other lands, are willing to test out every experiment in government that appeals in the slightest to their spirit of trying new things, regardless of what political economists or others may say as to the ultimate working out of these experiments." Oklahoma is a State with marvelous resources. Its towns have made amazing progress, and in many respects have set a pace which the towns in few other States in the Union can match. Its people are to a large extent active and virile, and, as stated, are willing to try experiments in government, believing that not all the wisdom that is possible in governmental affairs has yet been learned. But in this combination to limit the output

of oil in the State it would seem that the oil people and the State in combination have gone a little farther than any other attempt yet made by that State or by any other.

The proposition raises many interesting questions. Will the combination be permitted to stand legally? Will it go to pieces of its own weight, or because owners of oil lands refuse to be bound by such an effort to tie up their property and prevent the drilling of new wells? If this proposition can stand the test, would it be feasible, if Texas, for instance, should in some year produce an enormous cotton crop at a time when prices were very low, for the growers of that State in connection with the State officials to combine to prevent any further increase in the cotton-growing acreage? Would it be possible for the State through any commission to relieve the railroads of the State of the responsibility of accepting cotton grown on lands which the State had declared should not be put into cotton growing?

Some ten or twelve years ago, at a time when cotton was selling much below the cost of production, some wild visionary suggested that the South should burn up a considerable proportion of the stock in hand in order to raise the price by lessening the supply. The suggestion, as foolish as it was, was widely published by sensational papers, and was taken seriously by many of the leading papers of the country. The farmers of the South were berated for their shortsighted policy and denounced for flying in the face of Providence and undertaking to destroy a part of a large crop produced by reason of the benign work of Providence in giving unusual weather conditions for the growing and the gathering of the crop. Will the same criticisms spread through the land against Oklahoma?

## DEVELOPING WATER TRANSPORTATION

**A**S recently stated in the MANUFACTURERS RECORD, the business people of Macon propose to test the water-transportation question scientifically. With this object in view, the Macon-Atlantic Navigation Co., which was recently organized with a capital stock of \$80,000, proposes to put on the Ocmulgee River between Macon and Brunswick self-propelled steel barges for the purpose of obtaining water transportation on freight for Macon business men and at the same time to develop large areas of farm and timber lands along the river. Mr. B. Gilham, the secretary of the company, in a letter to the MANUFACTURERS RECORD, states that "253 shippers of Macon are the stockholders in the company. The city of Macon proposes to improve the river front at a cost of \$25,000 for docks." The water-transportation possibilities of the South by river and ocean and gulf have never been adequately developed. If the South had the scientific water-transportation development which has been made on the Lakes, its prosperity would be vastly enhanced and the volume of business along the South Atlantic and Gulf coast and by the rivers to and from the interior would be greatly increased. Every movement that looks to the utilization scientifically of these river and ocean transportation potentialities is important.

## DO YOU WANT ANYTHING?

**M**R. J. FLETCHER TURNER of Dadeville, Ala., recently wanted some machinery, but he did not know where to find it. He wrote to the MANUFACTURERS RECORD about his wants, and they were made known through our Construction Department, where information of this kind is published without cost, and now he writes:

Your paper is the finest medium for distributing information that I have ever seen. I only wanted a pump and tank, and did not know where to find them, but it is known to me now. I want to install some electric lights in a small way. The power that I have is about 6-horse-power gasoline engine. Can you find me a small dynamo?

The publication of the fact that Mr. Turner was looking for equipment and machinery of this kind brought him replies from all over the country, giving him the exact information that he desired. Thousands of others, whether readers of the MANUFACTURERS RECORD or not, can secure through our columns similar information if they will make their wants known to the MANUFACTURERS RECORD.



## BALTIMORE'S MUNICIPAL IMPROVEMENTS AS OBJECT-LESSONS TO ALL ENGINEERS AND CITY BUILDERS.

THE Baltimore of today is entirely unlike the Baltimore of yesterday, and the Baltimore of tomorrow will be far in advance of the Baltimore of today. For the first time in its history Baltimore is getting the magnificent equipment of municipal improvements which furnish the foundation on which to build one of the world's great cities. Every city builder, every real estate owner, every city officer, every engineer in the country, and, indeed, every business man in every city in the land, could study to profit the things which have been achieved in this city within the last five years, for they carry lessons of great importance to every man in every walk of life throughout the entire country interested in city building activities and possibilities. Indeed, there are thousands of lessons of importance to be learned through a study of what Baltimore has done, for many engineering, financial and municipal improvement problems are here being solved.

With a view to broadly telling the story of the amazing achievements that are being worked out in this city as an inspiration to show what other cities may accomplish, the MANUFACTURERS RECORD is preparing to issue in the near future a comprehensive publication covering the entire story of the upbuilding operations that have been going on during the last few years. The repaving of this city is being done at an outlay of over \$15,000,000, and the many contractors who have been drawn here to take part in this vast repaving work say that Baltimore is getting the best and the cheapest pavement work ever secured by any American city. The great sewerage system, built at an outlay of nearly \$25,000,000 by the city and some millions by individuals for private house connections, is being rounded out to completion, while other undertakings of far-reaching importance are under way.

Commenting upon some recent statements in the MANUFACTURERS RECORD about these municipal improvements, the Age-Herald of Birmingham says:

One of the most impressive evidences of Southern development is the rapid and substantial growth of our cities and their quick recovery from any disaster. Baltimore, although north of the Potomac, is to all intents and purposes Southern, and it furnishes one of the latest examples of Southern progress. As in the case of Galveston's flood, the great Baltimore fire of 1904 seems only to have served to stimulate its citizens to renewed activity and greater civic development. Baltimore has completely recovered from that shock and is now embarked upon an era of unprecedented improvement. The Baltimore MANUFACTURERS RECORD thus sketches the work contemplated:

"It is difficult to dip into any part of the tremendous upheaval that is lifting Baltimore into eminence right now and confine one's comments to a single section of the great work in hand. For the first time in the history of the world a city of more than half a million people is starting in to repave every street and alley in its bounds, to install an entirely new and complete sewerage system and to put all the wires into an underground municipally-owned conduit system. A greatly extended water-works system, a comprehensive park and boulevard system and dock and harbor improvement plans, the cost of all footing up \$100,000,000 or more, are some of the evidences of a robust realization by Baltimore people that the time has arrived to equip Baltimore to seize and hold her rightful place as the premier commercial and industrial city of the South, the most convenient shipping port for nearly half a continent, and the most enticing place of residence the country contains. Not all the people of Baltimore realize that elements are combining to irresistibly sweep the city on to a new and greater destiny, nor do those on the outside at all appreciate that Baltimore has now become permeated through and through with the same energizing forces that have revitalized the South and placed it well on its way toward leadership in trade and industry among all the countries on the globe."

One of the most striking features of the work now under way is the perfect co-ordination of effort on the part of the different municipal contractors and the public-service corporations. Plans are thorough and complete. All improvement involving excavation of any kind is to be completed in advance of the pavers, and no further work of this nature will be allowed in the streets for a period of five years. This will result in great economic benefit to the city as well as to the corporations.

## OVER THE BRIGHT BLUE SEA.

IT sailed last Thursday, if the news item—furnished several days in advance—was carried out, the second excursion to Europe under the auspices of the "Southern Commercial Congress." It was called "The American Commission of Municipal Executives and Civic Leaders." The name was big

enough almost to fill a boat, which accounts probably for the rather limited number of members, 37 male and 5 female, from 30 localities in 20 States. Representative "municipal executives" were conspicuous by their fewness. Florida furnished one ex-municipal executive, if he took the trip, but among the crowd from Maryland, numbering two in all, not a single "municipal executive" was noted, although one of the members from that State was once an over-night "mentioned" for a nomination to the United States Senatorship. This year's itinerary includes Hungary. Ah, Joey Bagstock, does that mean another bout at Totmegyer, with "peasant girls, evidently chosen for their complexions;" "huge mugs of beer" and the turkey trot? And are special "cables," telling of the delights of this excursion and its profound discoveries and suggestions, to be furnished from Washington to the American press?

## SALESMEN AS UPBUILDERS.

PRESIDENT GIBBES of the Gibbes Machinery Co. of Columbia, S. C., recently secured a number of reprints of an editorial in the MANUFACTURERS RECORD pointing out how salesmen operating in the South could benefit themselves and their customers by an intelligent study of the resources and progress of this section, in order to make these things the subject of discussion rather than the trivialities and the jokes with which so many of them while away the time and seek to interest their customers. Referring to this, President Gibbes writes:

We thank you very much for these circulars. We are going to send them to all of our salesmen.

The material interests of the South could be enormously advanced to the benefit of everybody if the thousands of salesmen who travel this section would make a business of being acquainted with what the South is doing and what it can do in material activities. They are the creators of business, and upon the development of business depends their own success and that of the firms by whom they are employed. They can make themselves the advance agents of prosperity and a broader development than the South has ever had if they will keep themselves

thoroughly informed about this section and utilize these facts in arousing a widespread interest among their customers in the potentialities of the South.

## WHICH WAY DO YOU VOTE ON THE RAILROAD QUESTION?

PROBABLY no man in America is better equipped by virtue of experience and ability to discuss the railroad problem of the country than John F. Wallace. While Mr. Wallace was vice-president and general manager of the Illinois Central Railroad that line expended about \$100,000,000 in reconstruction and betterment work. He was called from that position to become the chief engineer of the Panama Canal, and since his resignation of that place he has been consulting engineer for railroads and cities, making a special study of the terminal problems of the day. In closing a very comprehensive discussion in Leslie's Weekly on the need of enlarged terminal facilities as the most "gigantic task" before the railroads of the country, Mr. Wallace says:

The United States must choose. Either we must give up in some degree our pre-eminence as having by far the lowest railway capitalization in the world, and permit our lines to earn such revenues as will attract enormous investment for terminal and other improvements, or we must, on the other hand, renounce the American rapidity of national development and content ourselves with the slow growth which is typical of older countries.

This is a clear statement of the case. The American people will have to decide. Shall we halt our national development and be content with the slower growth of the Old World, or shall we find a way to bring back that wonderful era of expansion in industry, in railroad development and in commerce which prior to 1906 made this country the marvel and the wonder of the world? Do we want to slow down and continue to grow only at the present dull pace, or do we as a people want to bring about an activity and development which will give to the present generation the opportunities which to a large extent have been lacking since the collapse of the railroad industry in 1906 and the collapse of the financial interests of the country in 1907?

## Wider Market for Southern Iron

EFFECT OF FREIGHT RATE REDUCTION BY THE INTERSTATE COMMERCE COMMISSION.

By JAMES A. GREEN of Matthew Addy & Co., Cincinnati.

Ironmasters in the South, in Virginia, Tennessee and Alabama, have been as much astonished as pleased by the action this week of the Interstate Commerce Commission in reducing freight rates. They had asked for these reductions so long ago that it seemed as if the Commission had forgotten all about them. Of course, now that it is all over, it is easy to see that these matters cannot be decided offhand; that they are complex, many-sided, and a change in either direction affects many interests.

The new rates from the Virginia furnaces make for economic righteousness. If there is any fault to be found, it is that the Commission in this instance did not go far enough. The Virginia furnaces must ship all of their output away. There is practically no local market. They are all situated on the lines of two great systems—either the Chesapeake & Ohio or the Norfolk & Western. To reach their market they had to ship mainly to points beyond the direct reach of these lines. And the railroads to the north, with the intention apparently of favoring local furnaces, had made the rates beyond the initial lines so high that competition was almost eliminated. Philadelphia, Eastern Pennsylvania, New York and New England, where the Virginia furnaces used to ship so much of their output, were almost wiped off the map, for their Buffalo furnaces, thanks to some marvelous freight rates, were enabled to get as far south as Baltimore at prices which Virginia could not touch. The thing itself was wrong, and the way it was done by Northern railroads was even worse, and the Interstate Commerce Commission, in this case, has righted a great injury. Virginia as an iron center is a good deal more on the map than it was.

Alabama and Tennessee furnaces are going to be, by reason of this flat reduction of 35 cents a ton, more potent in the Middle West. They are not going to be

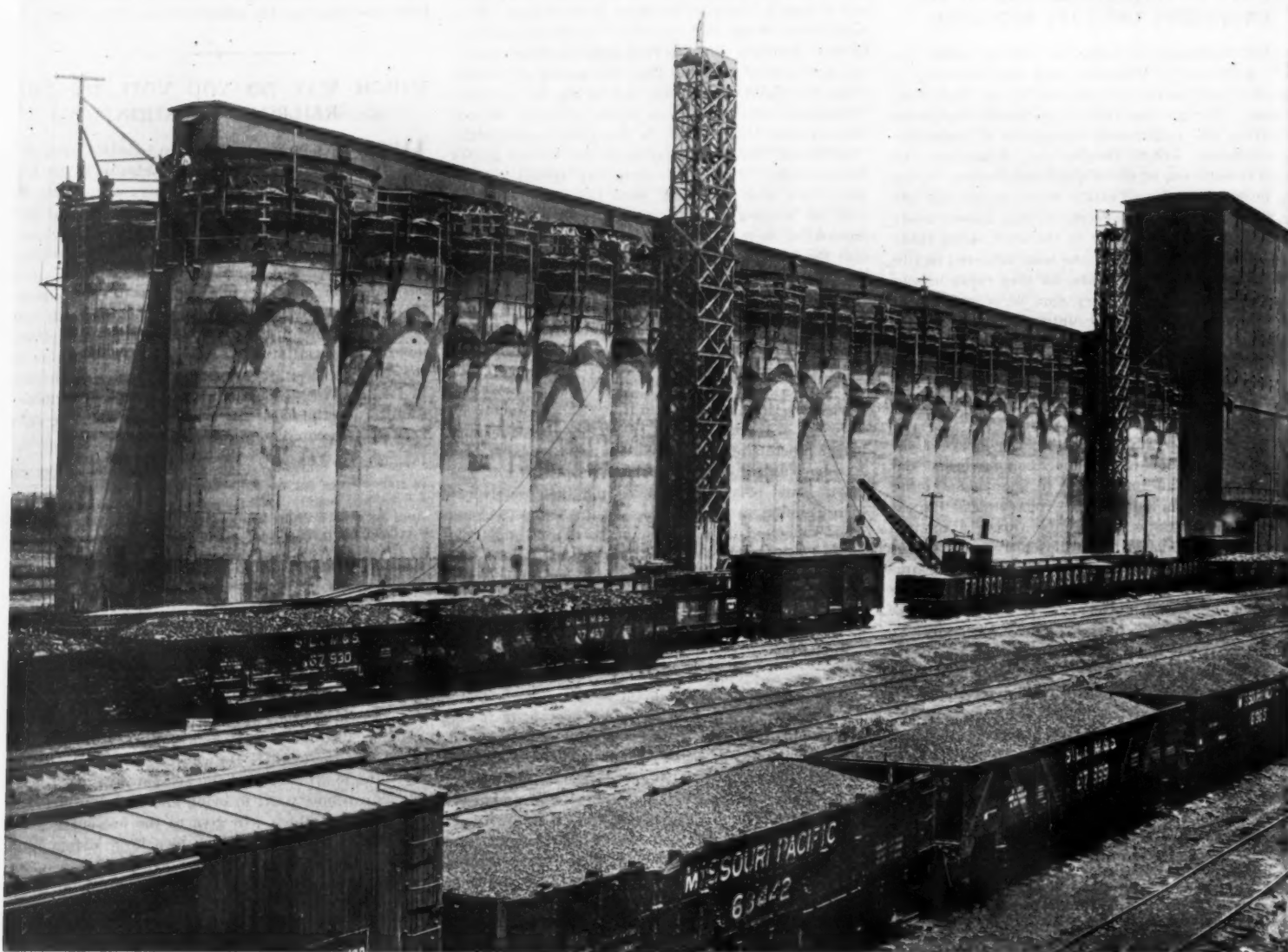
able to compete in Pittsburgh and Cleveland territories with local irons any more than is the case at present. Southern iron in those districts is too expensive a luxury even with the lower freights to be used except with extreme moderation. But in Detroit, and especially in Chicago, Southern irons will find a much heavier demand. This reduction has shoved their frontier line farther to the north.

When the Interstate Commerce Commission came into being it happened that Southern freight rates were at their maximum. In the old days they were fluid, rising and falling with the price of iron. For example, Cincinnati had a rate when iron was cheap of \$2.25 per ton from Birmingham. The rate today is \$3.25, and this reduction, effective August 15, will make it \$2.90. This proportion holds good everywhere. When the Commission was formed the rates were at their topmost limit, and there they stayed. The railroads were afraid to put them down because they knew of no way to put them back. New furnaces have in the past decade been built in the North, and, with local competition and these maximum rates, the South has for years labored under a heavy handicap. This has now been partly removed.

There is no question but that the reduction in rates means a wider market for the Southern ironmasters and a larger tonnage.

## Fuel Oil.

In connection with a paper by William B. Phillips of the bureau of economic geology and technology of the University of Texas, Austin, reprinted from the Transactions of the American Institute of Mining Engineers, is published a comprehensive and elaborate bibliography of fuel oil generally.



ADDING 59 CONCRETE STORAGE BINS OF AGGREGATE 1,300,000 BUSHEL CAPACITY TO A 1,000,000-BUSHEL GRAIN ELEVATOR AT KANSAS CITY.

### Immense Concrete Grain Elevator at Kansas City.

When the additions and alterations to its huge grain elevator at Kansas City now under way are completed, the Missouri-Pacific-Iron Mountain Railroad will have one of the largest plants of its kind in the world. As originally constructed, the elevator consisted of 10 concrete circular storage tanks, with a capacity of 80,000 bushels each, or 800,000 bushels in all, and the elevator building proper, with a capacity of 200,000 bushels, a total plant capacity of 1,000,000 bushels. Forty additional concrete circular storage bins, 22 feet in diameter and 84 feet deep, with a capacity of 25,000 bushels each, or 1,000,000 bushels all told, are under construction, besides 19 smaller bins, with a capacity of 7000 bushels each, or 133,000 bushels total.

The latter are what is known as "interstice" storage bins, and they will occupy the space formerly left vacant between the circular bins of this style of elevator. The elevator will have a total of 69 units of storage space, with a capacity of 2,133,000 bushels, which is more than double its present capacity. Two hundred men have been kept at work on the plant night and day for the past two months. It is expected that the improvements will be completed and the elevator in operation by August 1, in time to handle a good share of the heavy wheat crop now being harvested in that section of the country.

The elevator is being built for the Kansas-Missouri Elevator Co., Kansas City, J. G. Drew, president, and C. E. Smith, chief engineer, a subsidiary of the Missouri Pacific Railroad.

The foundation of the elevator rests on a reinforced concrete slab set 7 feet 6 inches below grade; it is 462 feet long, 52 feet wide and 2 feet thick. On this are 6 longitudinal walls 15 inches thick, which run the entire

length of the slab; these are broken up by walls below each bin which cross the three outside walls, leaving a clear space along the center of the entire length for one of the conveyor belts. These walls are 8 feet 6 inches high, and are surmounted by a 12-inch slab, which is at once the ceiling of the basement and the floor of the bins. The walls have openings in them for light and ventilation, and, of course, for the spouts of the bins.

Above the bins is the cupola, 8 feet high and 16 feet wide, containing a belt conveyor, and at each end there is a second story added above the cupola, one containing the necessary motors to operate the receiving belt conveyor, and the other to operate the elevator leg.

The belt conveyor at the top, in the cupola, is the receiving conveyor, bringing the grain from the workhouse to the bins; the belt conveyor below the bins is the shipping conveyor, taking the grain from the bins. The operation of the conveyor belts is somewhat different from the usual practice. Ordinarily there would be a tunnel from the bins to the workhouse and the shipping conveyor would run directly through; in this installation the shipping conveyor runs only to an elevator leg at the end of the bins which brings the grain to the top. If the grain is to go to the workhouse, it leaves the elevator and is spouted to the workhouse through a spout 2 feet by 1 foot, 135 feet long, made of 12 gauge sheet steel. The spout is lined with the same gauge steel, the lining being easily replaced when worn. When it is necessary to turn the grain, the shipping conveyor carries it to the elevator leg, which, taking it to the top, transfers it to the receiving conveyor, which carries it back to one of the bins. It is at this point that the advantage of the plan is apparent; for while this operation is going on, the machinery and conveyors in the workhouse may carry on their usual functions without interference.

New equipment in the old power-house will take care of the operation of the plant, the new machinery being

a 250-horse-power O'Brien water-tube boiler and a 200-kilowatt General Electric generator direct connected to a Chuse 20x24 engine.

The work was begun April 29, and it is expected that grain will be put into the bins by August 1, establishing a record for work of this sort. The contractor was the Stephens Engineering Co., Chicago, and the work is reinforced throughout. The forms used were built at the beginning of the work, and were carried to the top without removal by a system of jacks, making a continuous set of forms for the entire work. An accompanying illustration shows the work partly completed; the tops of the old bins are just discernible above the new work, while the cupola is plainly shown, as is the workhouse at the extreme right.

### Progress at Charleston.

A. V. Snell, managing secretary Chamber of Commerce, Charleston, S. C., writing to the MANUFACTURERS RECORD of progress in his city, cites figures showing the restoration of the commercial importance of the port, and adds:

"Our banks show an increase in deposits of from \$11,200,000 in 1900 to \$20,800,000 in 1914, and our clearances have increased from \$71,700,000 in 1907 to \$100,000,000 in 1913. The same corresponding increases are shown all along the line. While Charleston has never been considered a manufacturing point, we have 145 different industries, with a total capital exceeding \$21,000,000 and an annual product of \$18,200,000, and an annual payroll of \$4,400,000, employing 9923 men. The annual wholesale business exceeds \$30,000,000. All these statistics have been either taken from the United States Government reports or from careful compilation by this body by house-to-house canvass."



# The South and the American Iron and Steel Institute

FROM many leading members of the American Iron and Steel Institute the MANUFACTURERS RECORD is in receipt of letters of enthusiastic commendation of the decision of the directors of the Institute to hold the October meeting in Birmingham. These letters indicate a widespread interest in the study of the South, and even many who do not expect to be able to attend are interested in the fact that the Institute will give to others the opportunity of seeing for themselves the amazing progress that has been made not only in the iron and steel industry of the South, but in all the ramifications of business activities.

Birmingham, as the place of meeting, will face a great responsibility, for it must measure up to the opportunity and give to these iron and steel people, who represent the billions of dollars invested in metallurgical industries of the country, an opportunity of studying the resources of the Central South intelligently. It may be counted that Birmingham will meet this situation in a broad spirit and undertake to arrange that other sections of the Central South and those immediately tributary to Birmingham shall have the opportunity of co-operating with Birmingham in making this meeting a pre-eminent success. The members of the American Iron and Steel Institute who visit the South in October should be given every possible facility for learning this section and for seeing what it has and what it has achieved. Yet they should not be so importuned as to make their visit fatiguing rather than illuminating to them.

As a large number of these visitors have never before been in the South, or, at least, into the central district, the feasibility might be considered of setting apart a large room in the hotel at which most of them will stop, or in some nearby building, giving sufficient space to enable the companies which desire to do so to exhibit attractively-displayed samples of their ores, their coals and their cokes. A very interesting exhibit could be prepared which would throw light upon many phases of the iron and steel interests of this section, the cost to be borne by the individual concerns interested in making these displays. Samples could be had of many varieties of ores, of coal and of coke, which would make an interesting study to many of these people.

One of the letters received from one of the leading manufacturing concerns of the country asks the question as to whether Birmingham has adequate hotel facilities to accommodate the members of the Institute if a very large number should attend. This question ought to be so fully answered by the Birmingham committee that every member of the Institute could feel safe in being able to find ample accommodations of the best class.

It must be borne in mind that the members of the American Iron and Steel Institute represent the largest industry in the world, having an aggregate of invested capital running far into the billions of dollars. What they see and what they say will have a far-reaching effect throughout this and other lands as to the investment of capital in the South in metallurgical enterprises, as well as in other industries. Birmingham has a great opportunity to do itself and the whole South a splendid service. We believe it will fully rise to the occasion.

In response to a letter from the MANUFACTURERS RECORD to the members of the American Iron and Steel Institute as to whether they would attend the October meeting, the aim of the letter being to arouse their interest in the visit to the South, we have many responses, which are given in the following pages:

## Jay I. Andrews.

Jay I. Andrews, general manager of sales, American Sheet & Tinplate Co., Pittsburgh, Pa.:

"It is my present intention to attend the meeting of the American Iron and Steel Institute, to be held in Birmingham in October of this year. I am always pleased to visit the South, and try to take one long trip through the Southern States each year, as I find that by doing this I can keep in closer touch with the activities of the South than in any other way."

## James C. Alley.

James C. Alley, sales agent, Eastern Steel Co., New York:

"Am unable to say at the moment whether it may be

my good fortune to attend the suggested meeting of the American Iron and Steel Institute, to be held at Birmingham in October next. It has been my privilege to visit Birmingham on different occasions, and its wonderful resources, combined with its rapid growth as an iron and steel center, has impressed me to the point that to miss a visit to the city would be losing not only an instructive, but a rare treat."

## C. G. Atwater.

C. G. Atwater, American Coal Products Co., New York:

"A meeting of the American Iron and Steel Institute in the South is sure to be an interesting one, both because of the unusual resources of that region and because of the development that may be expected in the near future to make these resources available. Personally, I expect to attend this meeting, as far as the present outlook goes, though I cannot be certain at this early date."

## F. T. Bentley.

F. T. Bentley, traffic manager, Illinois Steel Co., Chicago, Ill.:

"Our corporation has large interests in that territory, and I am quite familiar with same. It is too early to advise definitely, but I now expect to attend the meeting. Undoubtedly it will be a very interesting place, for there are many of the members of the Institute who are not familiar with that territory, and October is a fine month to be there."

## William L. Brown.

W. L. Brown, president, Pickands, Brown & Co., pig-iron, iron ore and coke, Chicago, Ill.:

"In regard to the October meeting of the American Iron and Steel Institute at Birmingham, Ala., I think that in every way it was a wise move on the part of the Institute to hold their next meeting there, as everyone connected with iron and steel must feel an interest in the Southern field in the line of that industry. Our house is interested in property at Embreeville, Tenn., and naturally we are hopeful that there may be a revival of the iron business in the South sufficient to enable that company at some time in the early future to operate its plant. At this writing it is impossible for me to say whether or not I can be at Birmingham on the date stated, but certainly, if conditions favor, shall try to be present."

## James A. Burden.

James A. Burden, the Burden Iron Co., Troy, N. Y.:

"I hope to attend the meeting of the Iron and Steel Institute, to be held at Birmingham, Ala., during next October. Some two or three years ago I visited the Birmingham district, and am looking forward to another opportunity to inspect its extraordinary development."

## J. A. Campbell.

J. A. Campbell, president, the Youngstown Sheet & Tube Co., Youngstown, O.:

"The writer has no more interest in the South than he has in any of the other parts of this country, to see them grow and develop along permanent lines. I expect to attend the meeting in Birmingham this fall, not because of any particular interest in the South, but because I am particularly interested in the success of the American Iron and Steel Institute. I believe, with you, that the South has a great future for development, but am of the opinion that this development will be slow, but I hope permanent. Our company does quite a large business all through the South, and we are quite anxious that this part of the country is equally as prosperous as the North or West."

## R. B. Carnahan, Jr.

R. B. Carnahan, Jr., vice-president, the American Rolling Mill Co., Middletown, O.:

"I feel that the Institute has been very wise in choosing Birmingham for the next meeting, and I feel that the attendance should be very good. I certainly expect to be present myself. I am intensely interested in the developments that are now going on in the South. I feel that this meeting should be one of the most successful of the fall meetings of the Institute."

## John B. Clark.

John B. Clark, general superintendent, Donora Steel Works, Donora, Pa.:

"At this time I am unable to state whether or not I will be able to attend. There is no doubt but that the

location for a meeting is a desirable one, as the South certainly has a bright future before it."

## E. A. S. Clarke.

E. A. S. Clarke, president, Lackawanna Steel Co., New York:

"I shall make every endeavor to attend the proposed meeting of the American Iron and Steel Institute in Birmingham next October. It is my belief that the South has very great possibilities in both industrial and agricultural lines, and that particularly in the development of the steel industry it has before it a great future, and I naturally should like to visit Birmingham, the center of the steel industry in the South, and see for myself the great progress that has been made since my last visit several years ago."

## H. G. Clopper.

H. G. Clopper, general sales manager, the New Jersey Zinc Co., New York:

"A meeting of the American Iron and Steel Institute at Birmingham, Ala., should prove of much interest to all of the members. As to whether I can personally attend this meeting, I am not at this time in a position to state."

## A. A. Corey, Jr.

A. A. Corey, Jr., general superintendent, Carnegie Steel Co., Munhall, Pa.:

"It has been my intention for a number of years to visit the industrial centers of the South, but, unfortunately, each time I have been on the point of making arrangements other matters have interfered, and I am not at this time able to state positively whether I will be fortunate enough to be able to attend the meeting, as it may be necessary for me to be in another part of the country in October. It is my intention, however, to arrange my affairs, if possible, to permit my attendance."

## E. R. Crawford.

E. R. Crawford, president, McKeesport Tinplate Co., McKeesport, Pa.:

"The writer would be very glad indeed to avail himself of this opportunity to visit Birmingham and the South. If he finds it at all convenient to make the trip at that time he will do so."

## S. W. Croxton.

S. W. Croxton, Cleveland, O.:

"Though retired from active business, I was a pig-iron maker for many years, and I expect to attend the Birmingham meeting."

## Allerton S. Cushman.

Allerton S. Cushman, director, the Institute of Industrial Research, Washington, D. C.:

"Not only I, personally, but this Institute, is tremendously interested in the mineral resources of the South, as well as in the growing development of industry in that rich and fertile region. You may rest assured that I shall make every effort to be present on the occasion of the meeting of the American Iron and Steel Institute at Birmingham during next October."

## C. C. Davis.

C. C. Davis, Pennsylvania Forge Co., Philadelphia, Pa.:

"I expect to attend, and think the meeting at Birmingham will prove of great interest and general benefit to the Institute in giving the members first-hand information of the development of the industries of the South."

## H. A. Denel.

H. A. Denel, the Colorado Fuel & Iron Co., Pueblo, Colo.:

"I quite agree with you about the South being interesting and the wisdom of the meeting in Birmingham. The trip, for those who can attend, will prove most instructive. At the present time I do not believe I shall be present."

## W. T. Dean.

W. T. Dean, district manager, Chicago, power and mining department, General Electric Co., Schenectady, N. Y.:

"I am unable to say at the present time whether I will be able to attend the Birmingham meeting of the Iron and Steel Institute. I fear, however, that I will be unable to do so. I should certainly enjoy a visit to

the South next fall, as I share your belief in the great future of that region."

#### H. E. Derbyshire.

H. E. Derbyshire, general manager, Chambersburg Engineering Co., Chambersburg, Pa.:

"As a member of the American Iron and Steel Institute, I should be very much interested in a visit to the South with the Institute in October, and certainly anticipate attending the Birmingham meeting, trusting that we will have a fine meeting there in October."

#### Thomas Devlin.

Thomas Devlin, president, Thomas Devlin Manufacturing Co., Inc., malleable iron fittings, Philadelphia, Pa.:

"It is rather a bad time to write in an optimistic strain, owing to the very great depression in the iron and steel business and the severe competition that has resulted in present prices being so low that it is a question if this year's business at present prices would be enough to defray the expense of the trip to Alabama. However, we hope in spite of the adverse conditions that things will be better, as the writer is very anxious to make a trip to Birmingham, Ala."

#### P. W. Dillon.

P. W. Dillon, secretary, Northwestern Barb Wire Co., Sterling, Ill.:

"The only reason the writer does not like the idea of going to Birmingham is on account of the distance and the time it takes coming and going."

#### S. Dunlap.

S. Dunlap, assistant auditor accounting department, American Steel & Wire Co., Chicago, Ill.:

"I would be pleased to attend the October meeting of the American Steel and Iron Institute at Birmingham, but do not anticipate that I will be able to do so. I have made tentative plans to take a trip through the South, however, during the winter if nothing interferes, and I expect to obtain considerable benefit from the trip if I am able to go, and will be greatly interested in noting the developments of that section."

#### W. H. Eaton.

W. H. Eaton, manager of sales, American Sheet & Tin Plate Co., Chicago:

"I am very much interested in the South, and shall be glad to take advantage of the opportunity to see something of the iron center of the South during the Institute meeting, providing conditions at that time will permit my leaving here, and, of course, it is now too soon to reach any conclusion in that respect."

#### Howard N. Eavenson.

Howard N. Eavenson, Gary, W. Va.:

"I will be unable to attend the October meeting of the American Iron and Steel Institute in Birmingham, Ala. I believe, however, this trip will not only be a valuable one for the South, but that it will also be of very great value to those members of the Institute who are not definitely acquainted with the resources of this region."

#### W. Eppelsheimer.

W. Eppelsheimer, the American Rolling Mill Co., Middletown, O.:

"With regard to the October meeting of the American Iron and Steel Institute at Birmingham, Ala., there is no doubt but what this is a very wise choice. Being able to gather at first hand information of the wonderful possibilities of the southern portion of our country will no doubt be very beneficial to many members who, like myself, have not had occasion to visit this portion of our country in the ordinary course of business."

#### Walter H. Glasgow.

Walter H. Glasgow, H. C. Frick Coke Co., Scottsdale, Pa.:

"Meeting at Birmingham has my hearty approval, but date is too distant to permit me to assure my attendance."

#### F. H. Gordon.

F. H. Gordon, general sales agent, Lukens Iron & Steel Co., Coatesville, Pa.:

"It is a little early now to say whether or not I will be present at that meeting, but if I am not able to be present, it is almost certain that some other one connected with our company, a member of the association, will be on hand. We are always represented at these meetings, as we count them a great benefit to us. As for this particular meeting in the South, feel that it is a good thing for the Institute to hold its meetings in different sections of the country in order that its members may be benefited by learning of the exact conditions of the portion of the country at which the meetings are

held thus sending them back to their business duties with a widened horizon."

#### John L. Haines.

John L. Haines, assistant to vice-president, Jones & Laughlin Steel Co., Pittsburgh, Pa.:

"It is my opinion that the attendance at the October meeting of the American Iron and Steel Institute at Birmingham may not be as large as usual, on account of the fact that some cannot spare the time for so long a trip, but I believe those who do go will take (if possible) a keener interest than usual, and am confident all who attend will feel amply repaid. Many have little conception of the natural and manufacturing conditions in the Birmingham district. The October meeting will give all members a wonderful chance to see for themselves what before has simply been told them by others. I hope to be able to attend the meeting, although the date is still a little too far in the future to make a positive statement."

#### W. A. Harris.

W. A. Harris, manager, American Sheet & Tinplate Co., Canton, O.:

"Regret I cannot advise definitely at this time whether I shall attend. This meeting should prove of special interest to those members who have not visited the South."

#### August Heckscher.

A. Heckscher, 576 Fifth avenue, New York:

"Having been in Birmingham more than once, I am fairly familiar with the natural resources in that immediate vicinity. My impression is that, not only the Steel Corporation, but also most of those who, like myself, have invested large sums in the South have had nothing to show but losses and bitter enmity on the part of the National Government, as now constituted, for their pains. Inasmuch as our losses still continue and the Government has been doing what it can to accentuate and increase both these losses and our annoyance, I have no wish to attend the meeting of the Iron and Steel Institute in October next, and can only hope that a change for which all of us pray will restore prosperity to those who have made it possible for the South, as indeed for the West, to develop their marvelous resources. I am speaking of those who in the East have toiled, have been successful and are now made to suffer because they have not been failures or drones."

#### W. T. Hildrup, Jr.

W. T. Hildrup, Jr., M.E., general manager and treasurer, Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa.:

"At this date it is impossible for me to determine whether our business engagements will permit me to attend the Birmingham, Ala., meeting of the American Iron and Steel Institute, to be held during the coming October. I am, however, entirely familiar with the district, having resided at one time for some months in Birmingham, and feel confident that the district has a most brilliant future. It is my present intention to make every effort to be present at the meeting, but the business developments of the next few weeks will have an important influence in my final decision."

#### George C. Holmes.

George C. Holmes, district sales manager, Lackawanna Steel Co., St. Louis, Mo.:

"I will certainly make an effort to attend the American Iron and Steel Institute meeting at Birmingham next October. While I have passed through that locality, I have really never visited Birmingham before, and will be very glad to do so and become more fully acquainted with its possibilities, developments, etc."

#### W. S. Horner.

W. S. Horner, district manager, the American Rolling Mill Co., Pittsburgh, Pa.:

"I think it is a splendid thing to have this next meeting in the South, and hope very much indeed to be able to attend same."

#### Archibald Johnston.

Archibald Johnston, vice-president, Bethlehem Steel Co., South Bethlehem, Pa.:

"I think the idea of holding the meeting at Birmingham, Ala., an excellent one, and hope to avail myself of the privilege of attending the same."

#### E. F. Jones.

Evan F. Jones, treasurer and general manager, Morgan Spring Co., Worcester, Mass.:

"I have some doubt about my being able to attend this meeting, and will not definitely decide for probably two months. Think, however, the chances are I will not attend. I lived in Birmingham one year, from May, 1907, to May, 1908, and my connection with the steel interests at that time put me in position where I

naturally became quite well posted as to the possibilities of iron, steel, coal, etc., in the South in general, and particularly in the Birmingham district. A great industrial development is awakening in the South, and I think many fortunes will be made there during the next 20 years in iron, steel, coal, lumber and agriculture. Horace Greeley said: 'Go West, young man, go West!' Believe if he were alive today he would change that saying and make it: 'Go South, young man, go South.'"

#### C. T. Johnston.

C. T. Johnston, general manager of sales, Republic Iron & Steel Co., Youngstown, O.:

"We certainly expect to have a fair representation at the meeting. It should be a very interesting meeting, as it will be the means of the visitors that are not acquainted with the Southern district of seeing what a rapid growth it has taken in the iron and steel interests, and do not imagine that anyone attending will regret making the trip."

#### John W. Kagarise.

John W. Kagarise, superintendent open-hearth department, Carnegie Steel Co., Edgar Thomson Works, Braddock, Pa.:

"If possible, it is my intention to be present at the October meeting of the American Iron and Steel Institute, to be held at Birmingham, Ala. It is an opportunity to study manufacturing conditions in the South that I would be sorry to miss, as I feel the southern part of this country is just getting started."

#### G. Frederick Knapp.

G. Frederick Knapp, Cleveland, O.:

"If conditions permit, it will be of great interest to me to visit the Birmingham district at the time of the meeting of the American Iron and Steel Institute this fall, as this is no doubt one of the most interesting sections of the country engaged in the iron and steel business, owing to the remarkable location of the raw materials now deemed necessary for the manufacture of pig-iron."

#### J. W. Kreitter.

J. W. Kreitter, superintendent, Duluth, Missabe & Northern Railway Co., Proctor, Minn.:

"So far as I am concerned, I would be very much in favor of the Institute meeting being held at Birmingham, Ala., although, for a Northerner, I presume it would be pretty hot. I expect to attend the meeting if nothing unforeseen occurs."

#### J. E. Kreps.

J. E. Kreps, vice-president, the Union Rolling Mill Co., Cleveland, O.:

"Personally, it would be a great interest to me to visit the South, as I have never been there, and understand the developments there are making rapid progress."

#### L. R. Lemoine.

L. R. Lemoine, president, United States Cast Iron Pipe & Foundry Co., Philadelphia:

"It is too soon to say whether or not I will be able to attend the meeting of the American Iron and Steel Institute at Birmingham, Ala., the latter part of October. I hope to do so, for I believe such a meeting at Birmingham will be of special interest, and as you know, we have several works in that part of the world."

#### James Lord.

James Lord, president, American Iron & Steel Manufacturing Co., Lebanon, Pa.:

"I do not expect to be present at the October meeting of the American Iron and Steel Institute. It is generally believed that the Birmingham (Ala.) district can make pig-iron at low cost, due to the fact that the principal materials necessary are practically contiguous, reducing the assembling freight charges to a minimum."

#### C. E. Lozier.

C. E. Lozier, vice-president and manager, the Columbia Steel Co., Elyria, O.:

"If possible for me to attend, will do so, as I have never visited that section of the South, and would doubtless find the trip rich in agreeable experiences."

#### George F. McKay.

Geo. F. McKay, secretary and treasurer, Otto Coking Co., Inc., New York:

"This is a matter of considerable interest to me, and I sincerely hope to be able to make the trip when the time comes."

#### C. H. McCullough, Jr.

C. H. McCullough, Jr., vice-president and general manager, Lackawanna Steel Co., Buffalo, N. Y.:

"I expect to attend the meeting of the American Iron and Steel Institute, to be held at Birmingham, Ala., in October. I have not been in the South in many years,



and expect, on this occasion, to see much of general interest."

**Arthur G. McKee.**

Arthur G. McKee, engineer, Rockefeller Building, Cleveland, O.:

"I am pretty well acquainted with the iron and steel industry in the Birmingham district, and have no doubt that the members of the American Iron and Steel Institute will find a great deal to interest them there. It is impossible at the present time to say whether I can be present at this meeting, but will certainly arrange to do so if the trip does not interfere too seriously with my other engagements."

**R. V. McKay.**

R. V. McKay, superintendent blast furnace department, the Pennsylvania Steel Co., Steelton, Pa.:

"I am looking forward with a great deal of pleasure to attending the October meeting of the American Iron and Steel Institute in Birmingham, Ala. I have never had occasion to visit any of the iron and steel plants of the South, and consequently this offers a splendid opportunity for me to learn and observe some of the many wonders of this district. It should prove a most interesting and valuable trip for me."

**W. C. McKee.**

W. C. McKee, general superintendent, Hokendauqua Furnaces, the Thomas Iron Co., Hokendauqua, Pa.:

"Having been born south of the Mason and Dixon line, and raised there, anything pertaining to the advancement of the South finds a very warm support on my part. I realize in common with all thinking men that the economic conditions in the South following the war were very unfavorable, and that a certain length of time had to elapse in order to get back upon a basis where some real advancement could be made. I have been very much pleased, indeed, to note the rapid growth of industrial and manufacturing concerns in the South during the past few years, and am aware in a general way of the vast natural resources in that region. I expect to attend the October meeting in Birmingham, and will be very pleased to learn more definitely and in detail of the resources of the South, hoping with you that this will be a record meeting, and that it will be of some advantage as well to the manufacturing and industrial interests in the South as to the members attending."

**W. C. McMahon.**

W. C. McMahon, vice-president, Northwestern Malleable Iron Co., Milwaukee, Wis.:

"The meeting will undoubtedly be very interesting, and the knowledge gained of the resources of the South will be of great benefit to those who can attend. I regret very much that I will not be able to be present."

**G. C. MacKenzie.**

G. C. MacKenzie, B. Sc., chief engineer, Department of Mines, Canada, Ottawa:

"I regret to state that I will be unable to attend the Birmingham meeting of the American Iron and Steel Institute in October. If it were at all possible, I would gladly promise to be present, for I am anxious to visit the Birmingham district, and hope that some future date will see my wish fulfilled. Your proposal is, I consider, excellent, and will no doubt meet with the response it deserves."

**A. E. Maccoun.**

A. E. Maccoun, superintendent of furnaces, Edgar Thomson Works, Carnegie Steel Co., Braddock, Pa.:

"The proposed October meeting of the American Iron and Steel Institute should prove both interesting and instructive. I hope to be present, and feel sure that the members of the Institute will gain a much broader insight into the local conditions and their possibilities."

**J. A. Mathews.**

J. A. Mathews, general manager, Halcomb Steel Co., Syracuse, N. Y.:

"The writer hopes to be able to attend the meeting of the Iron and Steel Institute in Birmingham next October, but it is too early to make any definite statements in that connection. The writer is not as familiar as he would like to be with the manufacturing conditions and opportunities in the South, and would look forward with much interest and profit to the opportunity afforded at the coming meeting of the Institute."

**G. F. Meehan.**

G. F. Meehan, Ross-Meehan Foundry Co., Chattanooga, Tenn.:

"I was very much delighted to learn that the annual meeting of the American Iron and Steel Institute will be held in Birmingham in October, as it will be most interesting for the members of the Institute who have

never been to Birmingham to visit that remarkable section."

**C. A. Moffett.**

C. A. Moffett, manager of works, Alabama City, Ala., Gulf States Steel Co., Birmingham, Ala.:

"I know of no trip that would be more interesting and instructive than the one mentioned, for the reason that the members will then be able to see conditions in the manufacture of iron and steel which can be found at no other place in the world; that is, by standing on the top of a blast furnace they can see both the coal and iron-ore mines in operation; also the remarkable progress that has been made in the past 10 years in rebuilding and modernizing both the iron and steel manufacturing plants. With a body of men of the high intellect that compose this body, it will no doubt redound to the credit of the pioneers who had the nerve to put their money and energy in turning a section from corn and cotton fields to one of the foremost manufacturing cities in the South. I have no doubt that the fact that this meeting will be held in Birmingham will mean one of the largest and most successful meetings ever held by the Institute."

**J. Norman Sherer.**

J. Norman Sherer, president and general manager, Bellefonte Furnace Co., Bellefonte, Pa.:

"I am sorry to say that a previous engagement will prevent my attending the October meeting of the Institute, which will be held in Birmingham, Ala. Were I able to go, I am sure I would find every part of the South of interest, and especially the iron-ore deposits of the Birmingham district."

**W. P. Murray.**

W. P. Murray, Pickands Mather & Co., Cleveland, O.:

"It will be impossible for me to attend the meeting, all of which I very much regret, as I have always wanted to visit this district, and am sure that it offers an opportunity to the members of the Institute to get a great deal of information in reference to the iron-producing interests of the State of Alabama."

**L. T. Nagle.**

L. T. Nagle, general sales agent, Worth Brothers Company, steel plates and sheets, flanged and dished heads, Coatesville, Pa.:

"We have no doubt but that those who do attend will experience considerable pleasure and profit."

**A. C. Parsons.**

A. C. Parsons, chief chemist, Lackawanna Steel Co., Lackawanna, N. Y.:

"I am extremely doubtful whether I will be able to attend this meeting or not. But there is no doubt but a trip south with the Institute members will be of unusual interest. I have often thought that certain parts of the South were as yet undeveloped, and that some time in the not distant future we would see special activities in the development of these natural resources."

**Ward B. Perley.**

Ward B. Perley, assistant to president, United States Steel Corporation, New York:

"The writer expects to attend the October meeting of the American Iron and Steel Institute at Birmingham, and believes that this meeting should prove to be of very great interest to a large majority of the members of the Institute."

**Charles F. Quincy.**

Charles F. Quincy, president, the Q and C Co., New York:

"I hope to avail myself of the opportunity to attend the American Iron and Steel Institute October meeting at Birmingham, Ala. It certainly will afford the members an unusual opportunity of studying the recent developments in that section, which are so important in the future of our business."

**Wm. H. Ridgway.**

Wm. H. Ridgway, the Craig Ridgway & Son Company, Coatesville, Pa.:

"If I can possibly do so, I will certainly come to the Birmingham meeting of the American Iron and Steel Institute. I will go not so much for the American Iron & Steel Institute, but for a good chance to take a bath in the good Southern spirit. It is worth any man's while to go down into the South country, if for nothing else, just to be dipped into the bustling life at such cities as Atlanta and Birmingham. These two cities are a revelation to any Northern man. Here are to be found the finest set of business men I have ever struck in my travels, and I have been up and down the land no little bit. The first time I saw one of these

Southern cities, with the Yankee spirit, like the fellow in the story, 'I sat up and took notice.' When I sat around in these cities for a week or two my eyes, which were like butter plates when I first arrived, got as big as dinner plates by the time I went away. Yes, indeed, I certainly will take for an excuse to go South again the October meeting of the American Iron and Steel Institute, and you can tell Mrs. Childs down at Birmingham to put on an extra plate for Uncle Billy, and to save me—for I am only a poor old machinist—a hall bedroom."

**Richard H. Rice.**

Richard H. Rice, General Electric Co., West Lynn, Mass.:

"I am of the opinion that the location of the October meeting of the American Iron and Steel Institute at Birmingham, Ala., is a most fortunate one as giving members of the Institute an opportunity to see the wonderful development which has taken place in the Birmingham region in the last few years. It is particularly appropriate that the meeting of the Institute should be held at Birmingham, which is the center of the iron and steel production in the South. I shall make every effort to attend the meeting."

**John A. Roebling's Sons Co.**

John A. Roebling's Sons Company, iron, steel and copper wire rope and wire, Trenton, N. J.:

"It is impossible so far ahead to say whether anyone from this company will be able to attend the meeting of the American Iron and Steel Institute at Birmingham, Ala., in October. In our judgment, it is a desirable thing to hold the meeting as proposed. No doubt there are many members who do not realize the development of the South, both in manufacturing and agriculture, and the trip to Birmingham will be an object-lesson."

**L. P. Ross.**

L. P. Ross, general manager, Northern Iron Co., Standish, N. Y.:

"In reference to the meeting of the American Iron and Steel Institute, which will be held in Birmingham, Ala., in October of this year, I hope to be able to attend this meeting, as I am interested in the development of the iron and steel industry."

**William B. Schiller.**

Wm. B. Schiller, president, National Tube Co., Pittsburgh, Pa.:

"I expect to attend the October meeting of the American Iron and Steel Institute, which is to be held in Birmingham, Ala., not so much for the purpose of familiarizing myself with the resources of the Birmingham district as a manufacturing center—because I am already fairly familiar with these—but simply because it is my custom to attend all the meetings of the Institute. In common with all good citizens, I am keenly interested in the development of Southern industries, believing that their growth must inure to the welfare of the country as a whole, and it seems to me that this growth is bound to be much more rapid and important in the coming decade than in the past."

**John C. Schmidt.**

John C. Schmidt, president, Standard Chain Co., Pittsburgh, Pa., York, Pa.:

"I shall be very glad, indeed, to avail myself of the opportunity to visit Birmingham at the next meeting of the Iron and Steel Institute in October, as this will give me an excuse for doing what I have long wanted to do, and that is, visit the great and growing iron and steel center of Birmingham. The growth and prosperity of the Southern States has been, and the figures presented by Mr. Parker of the Beck & Gregg Hardware Co. of Atlanta, at the White Sulphur Springs meeting, are convincing of its growth in agriculture, manufacturing and in transportation. These figures are so stupendous that I recall with amusement the caution that was urged upon me thirty-odd years ago when I commenced business, as to probable losses in the South. I can safely refer to this in this way, in view of my long and happy experience in dealing with the Southern merchants."

**B. R. Shover.**

B. R. Shover, general superintendent, the Brier Hill Works, the Brier Hill Steel Co., Youngstown, O.:

"I believe that a visit to the iron and steel industries in the South would be of great benefit to every individual who is fortunate enough to be able to attend this meeting. The study of resources and methods varying from those with which a man is accustomed to deal in his every-day practice is always broadening, and I cer-

tainly trust that it may be my good fortune to be able to take advantage of this opportunity."

**G. B. Small.**

G. B. Small, second vice-president, United Engineering & Foundry Co., Pittsburgh, Pa.:

"No doubt a meeting of the American Iron and Steel Institute at Birmingham would be of much benefit to this section of our country, and have no doubt many of our members will be interested to the extent of making the trip. Personally, I do not feel that I would be interested in making a trip South at that time, as I have already made a number of visits to Birmingham heretofore."

**Harrison Souder.**

Harrison Souder, general superintendent, Cornwall Ore Bank Co., miners and shippers of iron ore, Cornwall, Pa.:

"I think it is in every way proper for the Institute to meet in Birmingham, as I believe there is much of interest in that district for its members. I shall certainly attend the meeting if nothing prevents."

**A. A. Stevenson.**

A. A. Stevenson, Standard Steel Works Co., Philadelphia, Pa.:

"Personally, I am very much pleased with the idea of having the meeting in Birmingham, as I feel the members of the Institute should be very much interested in what they will see, and those who are not familiar with what has been done during the last few years have a surprise awaiting them. At the present time I cannot tell whether or not I will be able to attend the meeting, but I certainly expect to do so if at all within the range of possibility. I know the meeting will be a success."

**Wade W. Taylor.**

W. W. Taylor, president, the Deforest Sheet & Tinplate Co., Niles, O.:

"We think this is a capital idea, and will enable many of the members who have not previously had the opportunity to make personal observation of the vast natural resources of the Birmingham district for the manufacture of iron and steel. The writer has attended all the meetings of the Institute since he became a member, and fully expects, at this time, to attend the October meeting in Birmingham, which possesses possibilities of being the most interesting of any of the meetings which the Institute has yet held."

**John A. Topping.**

John A. Topping, chairman, Republic Iron & Steel Co., New York.:

"Acknowledgment of your circular-letter of the 7th inst. would seem to be hardly necessary, as my interest in the South is well known to you, and therefore any remarks as to my motives for attending the meeting of the Institute to be held in October at Birmingham would seem to be superfluous. I may say, generally, that the policy of the Institute has been to hold its semi-annual meetings from time to time at different iron and steel centers, and naturally Birmingham would come in for recognition. Then again, I think a great many members who have never visited Birmingham will take a keen delight in looking over the district with a view to acquainting themselves with its possibilities."

**Enrique Touceda.**

Enrique Touceda, C. E., chemical and physical laboratory, Broadway, corner Thacher street, Albany, N. Y.:

"I am delighted that Birmingham has been selected for the October meeting of the Institute, and I will consider it a great misfortune if anything turns up that will prevent my being present. I am counting on going, and expect to be on hand."

**J. F. Townsend.**

J. F. Townsend, traffic manager, National Tube Co., Pittsburgh, Pa.:

"It seems to me that Birmingham is a very appropriate place for the Institute to hold a meeting, for it is really the Pittsburgh of the South. I will be very much interested in visiting Birmingham again, and anticipate attending the meeting."

**E. T. Weir.**

E. T. Weir, president, Phillips Sheet & Tinplate Co., Weirton, W. Va.:

"I am very glad, indeed, to note that the next meeting of the American Iron and Steel Institute will be held in Birmingham, Ala., and I am quite sure there will be a very large attendance of the Northern manufacturers. We have all heard, with constantly-increasing interest, of the great development in a manufacturing way that has taken place in the South, and the opportunity of

having a personal observation of this growth will be very much appreciated."

**John H. Watts.**

John H. Watts, National Radiator Co., Johnstown, Pa.:

"It will hardly be possible for me to attend the October meeting of the American Iron and Steel Institute in Birmingham, Ala. I am sure the meeting will be instructive and interesting to the members, and I very much regret that from present indications I will not be able to be present."

**C. V. C. Wheeler.**

C. V. C. Wheeler, Washington Steel & Ordnance Co., Washington, D. C.:

"On behalf of Mr. A. G. McKenna and myself, I beg to inform you that we are very favorably disposed toward attending the October meeting of the American Iron and Steel Institute in Birmingham, Ala. We will be interested in the manufacture of steel and manufacturing industries using the better grades of alloy steels in the shape of castings and forgings; also in chemical industries."

**Charles H. Zehnder.**

Charles H. Zehnder, 140 Cedar street, New York.:

"I am very much interested in the meeting of the American Iron and Steel Institute in Birmingham next fall, and I am planning now to be present at this meeting. The South has been developing its resources at a very rapid rate, and I personally have considerable interest, in coal lands particularly, in Southwest Virginia and Kentucky. There is perhaps no section of the country today that is showing a more rapid development, and I believe it offers unusually attractive inducements for capital and brains."

## UNIQUE MILL WELFARE WORK.

By LENA RIVERS SMITH.

A rather unique form in welfare work has been started in Kannapolis, N. C., by Mr. J. W. Cannon of Concord, N. C., and is one that has not been worked out by another mill. This is a home for girls who come to the mills alone, and where they can go and receive the chaperonage of a matron employed by the mill company and receive the best of advantages at a nominal cost.

The house is given by the mill company, and is furnished attractively at the expense of the company, and yet the pieces of furniture selected are within the limit of any progressive mill operative and are simple in design and the colorings made to harmonize. It is equipped with all the modern conveniences, including water, electric lights, steam heat, sewer connections, with running water in each room except the three bedrooms on the third floor, which were too high for the water pressure of the village. There are bathrooms, including shower, on both floors. Each bedroom is fitted up with single beds, bureau and chiffonier, and the bed linen and towels are also furnished by the company.

The mill company pays all the expenses of the building, including the laundry of all the table and bed linen, except the food and fuel for cooking, which is furnished by the matron, and as a compensation she is to charge the girls only \$3 a week for board.

A list of rules made by the company are framed and hung throughout the home for the observance of all boarders. These rules require regular habits as to the attendance of meals and an observance of rules of propriety and dignity. No girl will be allowed to remain in the home whose conduct is such that would arouse suspicion or who would have an unwholesome influence upon the other girls. It is to be a place for nice girls, where they can go and work in the mill and have all the protection of a home in which to live, and where their social lives may be uplifted rather than impaired on account of staying in cheap boarding-houses.

Kannapolis has made a rapid growth within the past five years, having sprung up from an old barren field to a mill village of between 5000 and 6000 people, the most of whom are connected with the mills. There has recently been completed an addition to the Patterson mill, and the Cabarrus mill was finished some time ago and is now in operation. An addition has been made to the school building, so that it will accommodate 800 pupils instead of 400, and excavation work has already started for the erection of a bank building in the town.

Charlotte, N. C.

## Of Interest in the Birmingham District.

[Special Correspondence Manufacturers Record.]

Birmingham, Ala., July 11.

The pig-iron market has been very quiet the past week, few sales and prices such as were reported in the last letter, all iron going at \$10.25 for third quarter and \$10.50 for fourth quarter. While the sales have been quiet, not more than 20,000 tons have been booked for the week, with an output of 150,000 tonnage from the furnaces in the district. Persistent reports have been current that one interest has sold largely of iron, but the officials will neither verify nor deny the statement that they have sold a large tonnage during the week. Iron interests, while optimistic as to the market, still state that the market is not what it should be at this season of the year. The indications are bright for a better business before the end of the month, and all are looking for an exceedingly active business for the fourth quarter of the year.

The old material market has shown a little activity, one company selling 3000 tons of scrap and a good price having been secured for the demand. The yards are full, and men interested have not been able generally to dispose of their stock on hand.

The cast-iron pipe business has been very quiet, few sales and little demand, but this is expected at this season of the year, as the summer is always quiet and few orders are booked, the principal part of the business coming in the late fall and winter. One pipe concern was down during the week, but has resumed operations. The Superior Pipe plant at Bessemer, a new concern, is ready for work, and will work a good force of men commencing with the 15th of the month.

The recent decision of the Interstate Commerce Commission as to freight rates on pig-iron from the Birmingham district will greatly help this district. The rate that has prevailed was when iron was selling at \$12 or upwards a ton, and when it dropped to \$10 and \$10.50 a ton there was no reduction, but the commission authorized a reduction of rates of 35 cents a ton to Chicago, Cleveland and New England points, giving to the Birmingham market an advantage not heretofore enjoyed.

The Pratt Consolidated Company will open a number of mines along the Warrior River, and will barge coal to the Gulf, using a tug for transportation instead of self-propelled barges, such as have been used on the river.

It is again rumored that the Illinois Central Railroad will build a line from Birmingham to Jackson, Miss., giving an outlet to the Gulf of Mexico that has in the past caused the road to transport its cars in a round-about way via Jackson, Tenn., making a haul of several hundred miles longer. Such a line would traverse a virgin territory and connect directly with the main line of the road at Jackson.

There is a general feeling that there will be no car shortage in the Birmingham district this year, as there is a surplus of cars on hand at this time, and while there is a demand for cars to handle the wheat of the North and Northwest, there has been so far no drain on the cars in Alabama, and all the cars needed for handling pig-iron are available.

The past week has given generous rains, and the crops have been blessed and improved by the rain that fell all over the agricultural district. The section in Alabama was suffering for rain for corn and cotton, but now everything looks bright for a season that will cause the raiser to see a good crop for his work.

A permit was issued Thursday for a roundhouse for the Southern Railway, to cost \$68,000, the building to be of reinforced concrete and to be 417 feet in diameter. Also a permit was issued to the same company for a \$25,000 chute and coalhouse, these being but a part of the big development to be made by this company in Birmingham.

Engineers for the Tennessee Coal, Iron & Railroad Co. will have completed within a short time the plans for the fertilizer plant which is to be erected by that company. The fertilizers are to be made from slag, and the capacity of the plant will be 250 tons per day. There is a lively interest in the proposed plant and fertilizer to be made.

The Lynchburg Chamber of Commerce, W. T. Corwith, secretary, has issued an attractive booklet entitled "In Virginia," presenting plain and direct facts about Piedmont Virginia for the benefit of homeseekers.



## Some Fallacies of Co-operation\*

By GEORGE BRADEN, President, Federal Chemical Co., Louisville, Ky.

[In this illuminating address Mr. Braden discusses many phases of the agitation for co-operation in this country, and points out some of the fallacious arguments, as he views them, in regard to co-operative stores and co-operative credits in country districts. He believes that the Government could be run for one-half the money now expended and with better service to the people, and suggests how this could be done.—EDITOR MANUFACTURERS RECORD.]

The most successful colonizers have recognized and insisted that the correct principle of colonization is that there shall be a due proportion of town population to agricultural population. No people has ever been known to progress greatly by agriculture alone. The mere creature needs of men are extremely limited, and but little effort is required to supply them. In order, therefore, to have the greatest efficiency in agriculture, it is necessary to have a demand for all that can be produced per acre of ground. The very meagre production on rich ground in medieval times was due to the fact that there was no incentive to produce that for which there was no demand. If a country is so situated as to export its principal agricultural products, like cotton, and tobacco in our earlier colonial period, their production may become profitable to a few large planters, but the masses share but little in the profits. In order that these may prosper, and that the soil shall retain its fertility, there should be diversity of crops and a demand at home for what cannot be shipped away.

Towns are essentially necessary as central locations for clergymen, teachers, physicians, publishers, printers, lawyers, carpenters, blacksmiths, druggists, dentists, undertakers, painters, saddlers, bricklayers, millers, watchmakers, tailors and the numberless artisans engaged in industrialism going to make up our modern complex society, who would never think of locating where there was no distributor of such necessities or comforts of life as they might wish to buy.

Notwithstanding the numerous efforts that have been made in this country by farmers' organizations to eliminate the middleman, and the resultant failures recorded thereof, it surprises one to see how tenaciously theorists and visionaries still cling to the task. It would amaze one who does not read agricultural papers to see how many plans different individuals have for the purpose. There are almost as many as there are individuals who write to the papers. These misguided persons are as sure of themselves as any populist ever was of being able to make dollars from the cast-off linen of the multitude, or a gold dollar in value out of 50 cents' worth of silver. Every political doctor in fear of losing his place is talking farm co-operation. These gentlemen seem to think that because co-operation, as applied to merchandising, is successful in some places under some conditions, the world at large is ready for its adoption. It would seem as easy to them as turning on a switch and starting an electric motor. All of their ideas are based upon the Rochdale experiment, which was begun in England 70 years ago. This system has been eminently successful on a part of the continent. It was begun where the laboring population is large. It was never intended primarily as a money-making proposition, but had in view the betterment in every particular of the laboring classes, and in connection with it they have established various institutions to meet these ends. They employ capable men to do the detail work, but its intelligent direction is by men who give their time gratuitously. The wages paid to its minor employees are less than the ordinary laborer in this country makes per week. If trade co-operation were undertaken here upon the plan of the Rochdale system it would face bankruptcy in a few months.

These doctrinaire economists who have recently been studying co-operation abroad seem to think that they have made new discoveries in economics, or at least have formulated higher principles and practices in buying than have heretofore obtained, particularly among farmers.

The bibliography of this subject is extensive, and replete with records of failure. An authority, in summing up the results of trade co-operation in various parts of the country to which it is adapted, has stated that the occasion for its failure in America is due largely to dishonesty and inefficiency. We have in the

co-operative efforts in trade that have been tried in this country unquestionably had both of these, but I do not think that failure here can be to any considerable extent attributed to these causes. The truth is that there is too much initiative and individualism in America for its growth. Every capable young man in this country is actively engaged in trying to get a start in the world, and realizes that his time and money and intelligence can be better utilized by his own individuality. If success were to be attained at all, the business would have to be carried on by incorporated bodies with credit responsibility. Those who would be most directly benefited by it have not capital even to carry on their own business, and hence would have nothing to invest in what might be supposed to be for the good of all. Again, our farmers who have a surplus for investment are looking for enterprises of more stability than small co-operative trade corporations can ever hope to have.

In England co-operation has been among the artisans and laboring classes, and has concerned itself mainly with trade and altruism, while in France, Italy and Germany it has concerned itself more with agricultural credit. Whatever the form of co-operation in Europe, its success is due to the extreme economy with which it is conducted. The American farmer has not the smallest conception of the petty economies the European farmer finds it necessary to practice. The country being so densely populated, it is easy for directors and officers of these institutions to come together at any time on short notice. The small savings that the American farmer would effect by co-operative buying are insignificant as compared to the valuable time he would have to give in assisting in its management. Outside of farm implements and commercial fertilizers, the European farmer's wants are extremely limited, and he has little use for a middleman, while the country merchant in this country is a factor whom the farmer cannot well do without. He can obtain credit from him without security when he is in need of credit and cannot get it from a bank. There may be isolated instances where the merchant overcharges for this credit, but those instances are rare. It is doubtful if a country merchant in this country quits life with a greater accumulation for his family than the farmer of like ability. It is assuredly questionable whether, with all the alluring promises of the politician, the farmer could manage co-operative buying with the same degree of economy to himself as his wants can be supplied by the middleman as he is at present established.

The city-bred man is apt to think that the farmer is not a business man. This is one of the infirmities of his conceit. A great many men conduct farming who are really not farmers, because they are not business men. From the failures that commercial agencies record every day, we may deduce also that many who occupy shops and counting-houses are not business men. We who come in contact with successful farmers, and know how their affairs are conducted and the numerous duties they perform, recognize that no occupation in life requires a more varied knowledge of business than the occupation of the farmer. He is essentially a business man, and if he were not he would not succeed. If he were to change places with the banker or the merchant he would succeed just as well in banking or merchandising as the banker or the merchant would in farming. It is because he is a business man that he makes his farm a success. The time of the successful farmer is so thoroughly and profitably taken up in the management of the business in which he has spent his life that he has none to spare for theorists or politicians. When one knows his good, hard sense, and the time it is necessary for him to give to make his business a success, it is not surprising that at the conventions of his gratuitously professional uplifters we find him conspicuously absent. You not only cannot fool him all the time, but it is difficult to fool him any of the time. A trained logician cannot more readily distinguish between theory and practice than the farmer can where his interests

are concerned. Unfortunately, farmers of this type are not in the majority, but two or three of them will leaven a community with good hard practical sense; and as time progresses and the influence of such men is more and more felt, we shall no longer hear of the politician duping the farmer.

We shall always have farmers who do not succeed, just as we have lawyers, doctors and shopkeepers who do not succeed, and all of these hopelessly submerged failures, whether in country or in town, will be ready to listen to the demagogue who tells them that their misfortunes are due not to their sloth or inefficiency, but to the trusts and the railroads and the money-lenders. As the country grows older and the conditions of life grow harder, we may have transitions in business that we do not even now dream of; but those transitions will come in answer to the demand for the survival of the fittest, and not because of alluring visions that may be portrayed to sloth and incompetency by place hunters. I believe the time has come when farmers, artisans and day laborers and clerks have grown tired of the refrain of calamity. I believe it is time for us to preach that hard times and the high cost of living are not due to the inefficiency of the farmer nor to the laziness of the laborer, but to the hundreds of thousands of idlers in town and city who produce nothing whatever, nor perform any right or useful function in society; who live and thrive at the expense of those who produce, by reason of conditions which vicious politicians themselves have created. These men have made life hard to the people by reason of taxes to the extent of thousands of millions of dollars to carry on expensive National, State and City governments. If it were possible to have the business end of the government conducted by a committee of these "malefactors" whom politicians are decrying, it could be done for half the money that is now expended, and with infinitely better service to the people, and we should hear no more of hard times, the high cost of living and the difficulty of the farmer in obtaining credit to carry on his business.

All of the efforts to establish rural credits and regional banks are not going to add one single dollar to values in this country, and capital, without unquestioned security and high rates of interest, is going to be just as inaccessible to the small borrower as ever until self-delegated uplifters, with their monotonous catchwords and fallacious expedients, are ordered to the rear.

There is just as much argument for co-operative buying by city dwellers as there is for those who dwell in the country. In fact, co-operative stores could be much better managed by city dwellers than by country population, because those who would have to officer and direct them could be more easily brought together for consultation when needed, and the reason co-operative buying in cities has not been seriously undertaken is because city dwellers have realized that it is more economical for them to do their buying through the present channels of trade than to undertake to establish co-operative stores and give the time to them that would be necessary for their successful direction.

This is an epoch of specialization and concentration, and there is no department in life where the promise of returns for it are greater than in agriculture. There is year by year an increasing demand for food products, and greatly improved methods by concentration of intelligent minds are required to meet it. There is a necessary demand upon the farmer's time for charitable, civic and religious duties. These he meets cheerfully, notwithstanding they require sacrifice and exhaustion of nervous force. He already gives to his business from 10 to 14 hours per day. Would the pittance in dividends from \$300 or \$400 stock in a co-operative corporation compensate him for the time he would lose in looking after it, when this time is required for other and more exacting things? Would the elimination of the middleman with whom he has been dealing, whom for years he has found faithful and responsible, benefit him or the community in which he lives? Would the struggle to take from him the business which he has established, and the consequent loss the struggle would entail upon both parties thereto, be compensated by any results that might come of the contest? Would not the impairment of his efficiency by taking from him a part of his business through club buying be a distinct loss to the community which could not be offset by such problematical saving as might be made in this way? I do not believe it could be logically demonstrated to the farmer that such a change would benefit him individually, while it would certainly be a loss to the entire country for him to divide his energies between two interests, where the gain in one is problematic, while the loss to the other

\*From an address before the National Fertilizer Association.

is certainly. We have the counter result of concentration in the example of the merchant who buys a farm and tries to conduct it in connection with his merchandising. The losses on his farm consume the profit on his merchandise. Would the farmer who tries co-operative storekeeping fare differently?

The process of eliminating all middlemen who are not economic factors in society has been going on gradually and quietly for many years. Formerly many lines of manufacture were distributed first to the jobber or wholesaler, and thence to the retail merchant. The development of the country and its increased purchasing power has shown these manufacturers that in instances it is more economical to eliminate the wholesaler or jobber; hence it is that in nearly all of the densely-populated portion of our country we find the manufacturer going directly to the large retailer, while the jobber's business is limited to such specialties, comparatively insignificant in value and small in volume, as cannot be economically distributed directly from the manufacturer to the retailer.

One man has as much right to be in the merchandising business as another, and it would be insane to say that the farmer is going out of his way if he should choose to put his capital into co-operative corporations for the

purpose of selling merchandise. There is no sentiment in business, and manufacturers would as leave the business of distribution were carried on in small towns by a co-operative corporation of farmers as by a corporation of doctors and lawyers. All that concerns him is that the middleman be efficient and able to distribute the full quantity of his goods for which there is a demand in a particular community, and that there be stability of business credit. It must be remembered, however, that the present system of distribution is the evolution of 200 years of business in North America, and that the middleman of the present is for all concerned the most efficient factor we have for the purpose, and that it would be a serious loss in our social economy for the farmer's time to be taken from affairs in which he has spent his life and given to something else for which he has not had a special training. Let it be remembered that in the transition of social organization, in the struggle for supplanting one order by another, whether it be the conquest of a new continent and the extinction of the conquered, or the taking of trade from those who have established it by a more powerful competitor, there is a tremendous economic loss and extinction of individual capital before the work is finished, and in civilized societies the end rarely justifies the cost.

be surprising, no doubt, to some of the readers of the MANUFACTURERS RECORD to know that the acreage production of wheat in those European countries in which it is grown at all is much larger than that of the United States, where the average acre production is from 13 to 15 bushels, while in the best of the European countries it is from 35 to 38 bushels, and in none, perhaps, less than 25. This is because the European farmer realizes the value of fertilizers, and does not stint himself in their use.

The fertilizer manufacturer and the chemist who devotes his time to the study of soils and their constituent parts hold the same position with respect to agriculture that is held by the druggist and physician with respect to the people of the community. The one studies the needs of the soil and prescribes for them, while the other furnishes the medicine necessary. To deny the value of the one or the other in the economic life of the country were as foolish as to deny the well-proven necessity of the physician and the druggist.

The Southern Fertilizer Association met at 10 o'clock yesterday morning, being called to order by President Peel, who made a few preliminary remarks and declared the meeting open for business. Reports of committees were followed by interesting addresses by Dr. B. W. Kilgore, State chemist of North Carolina, and Dr. R. J. H. DeLoache of the Georgia experiment station at Griffin, on soil building and the general purposes and accomplishments of the Southern Fertilizer Association.

The committee in charge of the soil improvement propaganda of the association reported that it had spent \$18,000 in the work during the past year, and gave an outline of the work accomplished. It was decided by the Association that for the coming year it would try to raise \$30,000 for carrying on the work. The discussion of this phase of the Association's business was participated in by a number of the members in an informal way, and the consensus of the expressions was to the effect that a great deal had been accomplished, and that the educational campaign should be carried on with unflagging zeal.

A committee appointed for the purpose of considering the advisability of the dissolution of the Association, and its going bodily into the National Fertilizer Association, this afternoon reported in favor of such proceeding and the formation of a Southern Soil Improvement Committee to work under the auspices of the National Association in carrying on the educational campaign above mentioned. The report of this committee, while opposed by a few members of the Association, will unquestionably be adopted at a later meeting of the body to be held before final adjournment, and the efforts heretofore directed by two organizations will hereafter be carried on by one, which will contain the full strength of membership and enthusiasm now embodied in both.

The National Fertilizer Association met at 9.30 this morning, and President Burroughs delivered his address, in which he discussed at length the progress made in the fertilizer business during past year and pointed out a number of things that remain to be done to bring it up to what it should be. He said business was now quite satisfactory, except as to prices, which rule quite low, but spoke optimistically of the outlook even in this regard. President Burroughs was followed by Pierre Jay, president of the Bank of Manhattan Co., New York, who spoke of the fertilizer business from the standpoint of the banker. Followed then reports of the standing committees of the Association and the appointment of committees for the ensuing year. At tomorrow's session there will be addresses by George Braden, president of the Federal Chemical Co. of Louisville, and F. C. Belser, manager of a St. Louis accounting firm, who will give an educational talk on cost accounting. These will be followed by reports of committees, election of officers and the choice of a meeting place for next year. There is a strong social side to the meeting of the fertilizer men, and they and their accompanying wives and daughters, of whom there are many, are enjoying themselves to the full. Last night there was a reception given by the officers of the Association and members of the executive committee. Tonight a banquet is being enjoyed by the members and their guests. A golf tournament is being played by members on the unsurpassed course of the Homestead Hotel, numerous driving and riding parties through the picturesque mountains have been arranged, and the days are quite filled with gaiety as well as business.

GEO. BYRNE.

The Westinghouse strike at East Pittsburgh, Pa., has been called off by the workmen, and the works are now running full time.

## Fertilizer Men in Convention in Virginia

THE WIDE RAMIFICATIONS OF THE INDUSTRY IN MANUFACTURES AS WELL AS IN AGRICULTURE.

[Special Correspondence Manufacturers Record.]

Hot Springs, Va., July 15.

This beautiful health and recreation resort, lying high up toward the summit of the Alleghany Mountains, is this week entertaining a body of commercial men in the success of whose business is bound up more of the future of the South and the prosperity of its people than in that of any other one group in the country. They are the members of the Southern Fertilizer Association and of the National Fertilizer Association, both of which organizations appointed this week and chose this place for holding their annual meetings.

The meetings have brought to Hot Springs a large number of the leading spirits in the fertilizer business, and the discussions that have taken place, and those scheduled to come would form a compendium of information of great value to the trade and to that vast body of men upon whose prosperity the prosperity of the country at large must always rest—the farmers. However, at this gathering, as at most others of the same general character, the most interesting and useful things said are those repeated in the rooms and lobbies of the hotels in personal conversation among friends, which go unpublished, and can only be rendered useful by private repetition.

For these, be it remembered, are "the men who know." Applied chemistry, having turned its powerful attention thereto, has reduced fertilization, soil building and preservation, the production of plant life, to an exact science, and no man now needs to work lean and sterile soil who has the will and the means to make it rich and productive.

The fertilizer business from one aspect is almost as old as agriculture, while from another it is little more than a half-century in age. For centuries men who made a business of planting and reaping have known that animal excrement, the offal from stable and pen, spread upon the ground would make it bring forth in more generous abundance, but it was not until comparatively recently that they began to analyze the matter with the object to discover the reason why this was so.

In 1660 it became known that saltpeter would increase the fertility of soil, and one English farmer of that time left a written history of how his crops of corn had been "prodigiously" increased by the application of that mineral to the soil; but it was a century and a half after that before anybody tried to figure out why it was. In 1804 Theodore de Saussure, a French investigator, worked out the true significance of the value of ash ingredients to plant life, and pointed out to the world the fact that without them there could be no vegetable growth. It was then a number of years longer before anybody seems to have made an attempt to apply chemical science to agriculture.

In 1840 and 1842 Justus von Liebig published the result of his investigations along the path blazed by de Saussure, clearly demonstrating the fact that to bring forth plant life there must be in the soil a sufficient

supply of soluble mineral substances, the consequence of which publication was an awakening of the British agriculturalists to the necessity of taking advantage of its teaching. These reports of von Liebig's, therefore, may be said to have laid the foundation of the commercial fertilizer business. By the middle of the last century it had become well known to all who pretended to understand the constituent elements of productive soil that potash, nitrogen and phosphoric acid were necessary to all agricultural soil; that they were easily exhausted, and that when exhausted they must be restored or else the value of the land for crop-growing purposes would be destroyed.

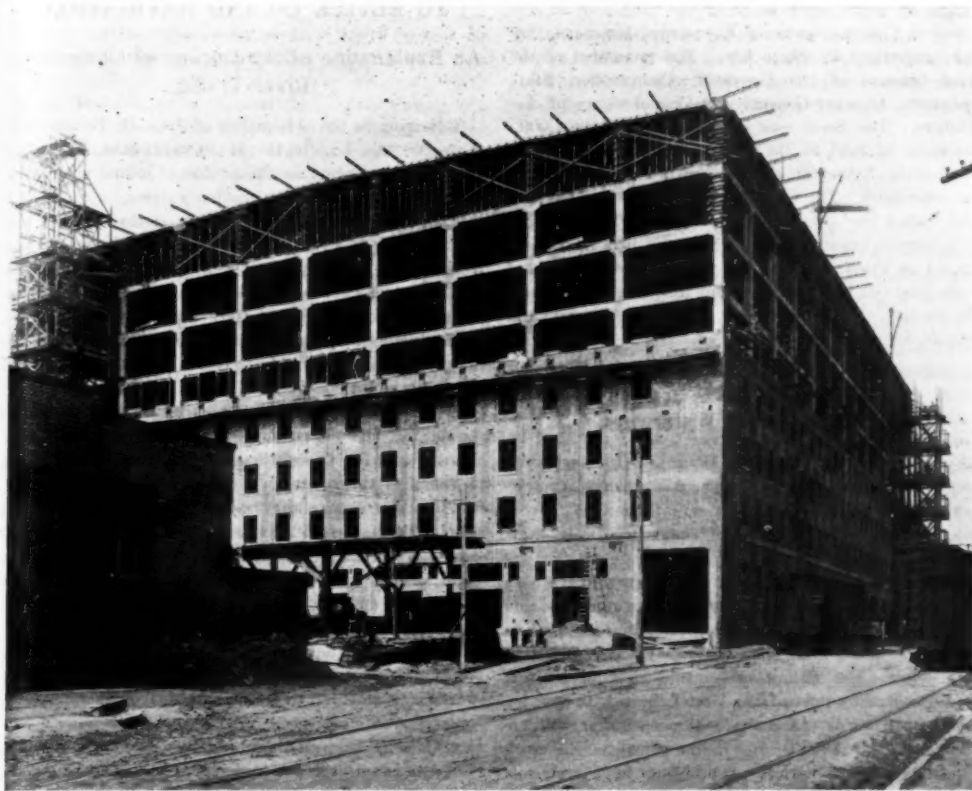
Having discovered that these things were necessary to plant life, the next thing to be done was to learn how they might be supplied when lacking, and that in a manner sufficiently economical to permit of their being used to a profit. Chemists began the study of soils and plants to learn what particular parts of the one were necessary to the production of the other, and how to make such combinations as would serve to bring the soil up to its highest state of productivity. Some of the ablest chemists of the time were employed in these researches and experiments, prominent and successful among them being Dr. Gilbert, chemist of the Royal Agricultural Society of England; Sir John B. Lawes, and the famous Frenchman, M. Ville. As a result of these investigations and experiments men began the manufacture of fertilizers as a business, and it was not long before the reinvigoration of exhausted soils by the application of commercial preparations had been established among the facts of successful agriculture.

The start once made, the growth of the fertilizer business in this country was rapid. In 1859 the total output of the factories in the United States was valued at \$891,344; in 1860 it had increased to \$5,815,118; in 1870 to \$23,650,795; in 1880 to \$39,180,845; in 1890 to \$44,657,385, and in 1900 to \$114,273,000. Last year the business approximated \$125,000,000.

In the advanced stage which is occupied by the business of agriculture today there is no reason why anybody should suffer from crop failure, beyond the inability to control the rainfall, for by a proper soil analysis any planter may be informed, infallibly, of what his land will do in the production of any given crop. In fact, while it is, of course, impossible to regulate the rainfall, there are certain soil ingredients which so greatly conserve moisture that even that matter may be controlled to a considerable extent, assuring production in seasons that would otherwise bring about total crop failure.

As agriculture is the foundation of civilization, and fertilization must become, sooner or later in every country, the basis of agriculture, it has been well said that civilization rests upon the use of fertilizers to a greater extent than upon any other industry. It is, therefore, a business in which every individual is greatly interested, whether he recognizes the fact or not. It will





REINFORCED CONCRETE SHIPPING WAREHOUSE OF THE BALTIMORE BARGAIN HOUSE, WITH ELEVEN ACRES OF FLOOR SPACE.

### Eleven Acres of Reinforced Concrete Construction.

An eight-story reinforced concrete warehouse, covering nearly 11 acres of floor space, is in course of construction in Baltimore for the Baltimore Bargain House. With this new warehouse in operation, the Bargain House will have a total area of over 30 acres of floor space in its several buildings, including the 12-story steel building erected two or three years ago at Baltimore, Liberty and Fayette streets, which houses the main salesrooms and offices.

Last year this concern did a business of \$16,456,715, which was an increase of \$2,562,065 over the preceding year, an indication of the possibilities of trade expansion even in periods of depression. The business of this establishment is almost wholly in the South, and this great increase shows, too, how trade may be developed there by people who put into the effort to secure it the kind of energy displayed by the Bargain House.

The new building, which is faced with brick, rests on 1800 "Simplex" concrete piles as a foundation. For the rapid, efficient and accurate handling of vast volumes of merchandise, it will be equipped with the most modern devices, including high-powered elevators, mechanical conveyors, gravity conveyors for transferring goods to lower floors, inside driveways to accommodate the company's fleet of automobile trucks, railroad tracks for the direct loading and unloading of cars, and other devices to facilitate the economical moving of goods.

This warehouse will operate its own heating and lighting system, utilizing a Rice & Sargeant engine manufactured by the Providence Engineering Works, Providence, R. I., driving Westinghouse 220-volt direct-current generators, manufactured by the Westinghouse Electric & Manufacturing Co. of East Pittsburgh, Pa., to furnish electric current for lighting and power, and a vacuum system of heating, using Haynes valves, will be installed. Six electric elevators and two steel chutes are furnished by the Otis Elevator Co. of New York, together with one mechanical conveyor manufactured by the Lowerator Company of Brooklyn. Rolling steel doors made by Kinnear Manufacturing Co. of Columbus, O., and a complete sprinkler system constructed by the General Fire Extinguisher Co. of New York city will be installed for protection against fire.

The building was designed by Joseph Evans Sperry, and is being constructed by John Waters, contractor and builder, of Baltimore, with subcontractors for the following materials:

Reinforcing concrete, Arthur Tufts, Baltimore; "Saylors" cement, John S. Bullock Lime & Cement Co., Baltimore; red brick, Frederick Brick Works, Frederick,

Md.; bricklaying, Walter Stahl, Jr.; "Simplex" concrete piles, Crawford Paving Co., Washington, D. C.; iron work, Chesapeake Iron Works, Baltimore; glass, Edward L. Kaufman & Co., Baltimore; painting, Geo. J. Roche & Son, Baltimore; vitrified brick paving and sidewalks, S. W. Filbert, Baltimore; steel windows, Detroit Steel Products Co., Detroit, and roofing, Vaile & Young, Baltimore.

### The Canton Company.

The Canton Company of Baltimore will dredge a 35-foot channel from the main channel in Baltimore's lower harbor to the company's concrete pier now under construction. Contract for the channel has been awarded to the Maryland Dredging & Contracting Co., Baltimore, which will at once begin work. A steel superstructure will be built on the pier, which will be 850 feet long by 150 feet wide, while adjacent to it is being erected a six-story concrete construction fireproof warehouse 200 feet long by 80 feet wide, this pier and warehouse having previously been detailed when contracts were awarded. It is estimated that the improvements mentioned will cost \$500,000, and the company's plans contemplate the construction of additional piers and warehouses in accordance with trade demands. These modern facilities of the Canton Company for manufacturers and other shippers are steadily attracting new and additional investments of capital at Baltimore for meeting the needs of commerce. The MANUFACTURERS RECORD has heretofore completely detailed the present facilities and proposed extensions of the Canton Company.

### A \$100,300 Dredging Contract Awarded.

The Government has awarded contract to the Bowers Southern Dredging Co., Galveston, for 1,700,000 cubic yards of dredging, at \$100,300, to enlarge and deepen that portion of the Norfolk to Beaufort (N. C.) inland waterway between Beacons 3 and 5 in Lower North Landing River, Virginia, and North Carolina. Bids for this work were recently opened at Norfolk by Lieut.-Col. E. Eveleth Winslow, United States Engineer, Norfolk. The bids submitted were as follows: Bowers Southern Dredging Co., .059; Atlantic, Gulf & Pacific Company, New York, .0623; Sanford & Brooks Company, Baltimore, .0685; Maryland Dredging & Contracting Co., Baltimore, .07; Norfolk Dredging Co., Norfolk, .1025; Southern Dredging Co., Mobile, .0685; Home Dredging Co., Mobile, .08.

### TO EXHIBIT MANUFACTURES.

Representative Industries Interested in Plan for Louisville.

[Special Correspondence Manufacturers Record.]

Louisville, Ky., July 13.

Manufacturers' exhibit buildings, which have been in successful operation in Chattanooga, Nashville and other Southern cities, and have on that account attracted the attention of Louisville interests, are to have an addition in this city if plans which are now being worked out are matured, as there seems to be every reason to believe they will be. The proposed exhibit will be in the hands of the Louisville Manufacturers' Sales & Exhibit Co., which is now being organized with E. D. Noe as the general manager. The plan is to distribute stock among the manufacturers taking space, so that the control of the proposition will be in the hands of the exhibitors.

In addition to merely displaying locally made products, two salesmen will be supplied to handle the goods on a commission basis, the commissions going into a fund to be used for dividends on the stock, advertising and other purposes. The charge for the space will be sufficient to cover the operating expenses of the building, which will be chiefly rental, the salary of the manager and salesmen, janitor service, etc.

Louisville manufacturers have been particularly impressed with the fine work done by the Chattanooga exhibition, and also that at Nashville, which is somewhat more recent. The interest shown in the establishment of the new enterprise is already so great that those connected with it believe that its success is assured.

The furniture interests of Louisville have shown special interest in the plan, and are among the leaders in the project thus far. Jeffersonville and New Albany, Indiana suburbs of Louisville, are also to be included in the plan, while outside manufacturers who have no local competition are also to be admitted. The Dupont Powder Co. is the first of this class to arrange for representation. Other concerns which are reported to have completed arrangements for exhibits are the Ross Chair Co., the Dow Wire and Iron Works, the Penslee-Gaulbert Company, paints and varnishes; the J. M. Robinson-Norton Company, overalls, shirts and underwear; Peter Klerner, New Albany, furniture; Jeffersonville Manufacturing Co., furniture; the Ballard & Ballard Company, flour millers; Columbia Mantel Co. and Gohmann Bros. & Kohler Co., New Albany, stove founders.

The exhibition building will probably not be a new structure, but a centrally-located building, probably on Main street, will be secured. Several structures are under consideration. Ample floor space, elevators, etc., will be needed. It will also be necessary to remodel somewhat, as rest and writing rooms, washrooms, etc., will be provided for visitors. Retail merchants in the trade territory tributary to Louisville will be catered to principally, and it is hoped to make it possible for a buyer to find all of the goods produced in Louisville available in the exhibit.

An interesting feature of the situation, which seems to assure the success of a plan for a manufacturers' exhibition building, whether the present project is accomplished or not, is that the Louisville Rotary Club, an organization composed of representatives of all lines of business in Louisville, had appointed a committee on the subject and was working in the direction of a building at the time the company referred to launched its plans. The Rotary Club has held up its work pending the completion of plans for the Louisville Manufacturers' Sales & Exhibit Co., and if this should happen not to go through, the club will give the proposition attention.

Among the manufacturers on the committee of the Rotarians are Henry Vogt of the Henry Vogt Machine Co.; James Clark, Jr., of the James Clark, Jr., Electric Co., manufacturer of electrical apparatus; Alfred Struck, head of the Alfred Struck Company, interior finish, and George Cross of the Red Chief Manufacturing Co., which makes corn mills and other agricultural equipment. R. A. McDowell, a prominent Louisville attorney, is chairman of the committee.

Interest in the consumption of Louisville-made goods was greatly stimulated last summer by a Made-in-Louisville exposition which was held in the windows of downtown retailers, who gave this space without charge during the last week in August. So good were the results obtained that it has been decided to repeat the show this year. It is not known yet whether it will be in the

windows of the retailers, as in 1913, or whether a hall will be secured. The chances are that the First Regiment Armory, which has about 30,000 square feet of floor space, will be used for the next exhibition.

One of the features which is expected to work out of the establishment of the proposed exhibition building is greater co-operation on the part of manufacturers in making up mixed carloads so as to get to territory which is now closed to them. It is pointed out that manufacturers in the same general field, making non-competitive lines, could readily combine their shipments to a given point and thus secure a greatly reduced freight rate, making it possible to reach territory which cannot at present be solicited, and it is hoped that showing the goods of local factories together will bring these concerns close enough together to develop a co-operative plan of this kind.

The plan of the Louisville Manufacturers' Sales & Exhibit Co. has been endorsed by the Louisville Commercial Club, and other organizations are taking interest in it. It is hoped to have the organization completed by the end of the summer, so that the exhibition can be arranged in time for the fall buying season.

G. D. CRAIN, JR.

### For Everglades Drainage.

The Board of Commissioners of the Everglades District of Florida is offering for sale \$1,000,000 worth of 30-year 6 per cent. drainage bonds, authorized by act of the Legislature of 1913. The bond issue is for the purpose of continuing drainage work in the Everglades. These are the first bonds issued by the district, the drainage work having been heretofore carried on with money derived from sale of State land in the Everglades and by funds derived from the drainage tax levied for that purpose. F. C. Elliot, chief drainage engineer, Tallahassee, Fla., writes to the MANUFACTURERS RECORD:

"Drainage work in the Everglades was begun by the State, in a small way, in 1906. In 1910 operations commenced on a larger scale, and contract was let for the construction of four canals having a combined length of 200 miles, requiring the excavation of approximately 22,000,000 cubic yards of material, at a cost of approximately \$2,500,000. Since 1910 additional contracts have been let amounting to 75 miles of canals, with approximately 8,000,000 cubic yards of excavation, at a cost of \$700,000.

"Work on the first contract is 70 per cent. completed. Three auxiliary canals under a second contract have been completed, and work under a third contract for a main canal is well under way. The total amount of work accomplished to date, including that done by the State, amounts to 255 miles of canals open, of which 150 miles are fully completed, representing an excavation of 20,175,000 cubic yards of earth and rock at a total expenditure to date, including every expense of whatever nature connected with the drainage work, of \$2,490,000.

"The drainage of the Everglades depends primarily upon preventing Lake Okeechobee from overflowing its banks and inundating the lands to the southward, and, secondarily, upon provision for excess rainfall on the land itself.

"The work thus far accomplished in the Glades belongs to the secondary class, and consists of drainage canals proper traversing the Everglades. The lands which these canals traverse are subject, at the present time, not only to the rain which falls upon them, but also to the overflow from Lake Okeechobee. The drainage canals, therefore, cannot extend their full benefit in removing excess rainfall until the primary, or Lake Okeechobee control canal, shall have been built for preventing lake overflow.

"For the purpose of preventing lake overflow a large canal is planned leading directly from the lake to the Atlantic, having a discharge capacity sufficient to bring the lake under control. The opening of the control canal, in addition to preventing Lake Okeechobee from overflowing its banks, will drain 100,000 acres of land contiguous to the lake and as much more along its route, now almost as badly in need of drainage as Everglades land. It will also form, with Lake Okeechobee and the Caloosahatchee canal and river, a navigable waterway entirely across the State, and afford at its eastern end the development of a valuable hydro-electric power.

"The purpose of the present bond issue is intended primarily for providing the greater part of the fund necessary for paying the cost of the Lake Okeechobee control canal.

"The drainage work is under the direction of the Board of Commissioners of Everglades Drainage District, authorized by State law. The personnel of the board consists of the Governor, Comptroller, State Treasurer, Attorney-General and Commissioner of Agriculture. The State now owns approximately 1,000,000 acres of land in the district; the remainder, approximately 3,000,000 acres, is owned by individuals and companies. The State lands comprise a part of a fund called the Internal Improvement Fund, created by legislative enactment, and are vested in a board designated as Trustees of the Internal Improvement Fund of the State of Florida, consisting also of the Governor, Comptroller, State Treasurer, Attorney-General and Commissioner of Agriculture."

### Atlantic Deeper Waterways.

Congressman J. Hampton Moore of Pennsylvania, president of the Atlantic Deeper Waterways Association, in his official call for the seventh annual convention of that organization, September 22-26, in New York city, says:

"The city and State of New York have always been vitally interested in the improvement of waterways, and this year is a particularly appropriate time for a meeting of the Atlantic Deeper Waterways Association at that point. The Erie Canal, which first made New York the leading port of the United States, is now being reconstructed by the State at a cost that will approximate \$140,000,000, and in the course of the work of construction a variety of problems have been met and surmounted, far exceeding, save only in size, those at the Panama Canal. In the near future there will be modern free barge navigation to New York city from Lake Erie at Buffalo, from Lake Ontario at Oswego, from Lake Champlain at Whitehall, by way of the Hudson River. This navigation will be of standard dimensions with those adopted by the United States Engineers for the Atlantic Intracoastal Waterway. By comparison of cost, the total amount to be expended by the United States Government on reported projects of the Intracoastal Waterway system is much less than that undertaken and paid by New York State alone on its present project, and the people of New York are now realizing the importance of a physical connection between their great system and the magnificent chain of coastal waterways advocated by this association.

"The acquisition of the Chesapeake and Delaware Canal (now favorably reported in the River and Harbor bill) and the adoption of the New Jersey Canal project are both essential to any connection with Southern waters, and these are the projects on which it is important that early action shall be secured. The acquisition of the Chesapeake and Albemarle Canal, in response to the request of this association, has opened a free water connection from the North Carolina Sounds, and the prospective acquisition of the Chesapeake and Delaware and the Federal improvement of the Delaware River brings improved navigation as far north as Trenton.

"There remains to be constructed the modern waterway, recommended by the chief of engineers, across the State of New Jersey, connecting with Staten Island Sound, now in course of improvement. Within the limits of New York City the Federal Government is now undertaking a magnificent work of improvement in the East River, opening a better passage to Long Island Sound; and in the Harlem and Bronx Kills, providing a better eastbound connection from the Hudson. The early opening of the Cape Cod Canal, now almost completed, focuses in New York a group of great waterway improvements for the completion of which a united effort is needed at this time."

### Wants Agency in America.

The Mercantile Trust & Deposit Co., Baltimore, has received a letter from Ernst Fischer, manufacturer and exporter, Gablonz o. N., Austria-Hungary, seeking to arrange for an American agency. Mr. Fischer writes as follows:

"Regarding an agency, I beg to inform you that I am manufacturing buttons and beads of glass, celluloid or galalith, gilt and silvered jewelry, stones, lamp shades of glass, stamps, articles for remembrance of bathing and pilgrimage places, etc. Commission 5 per cent. for the agent of the amounts invoiced and paid regularly by the clients. Payment may be made on short sight or at once against documents by bankers."

### TO REVIVE INLAND NAVIGATION.

#### An Explanation of the Decline of Competitive River Traffic.

Referring to the able article of John H. Bernhard of New Orleans, La., in the MANUFACTURERS RECORD of June 11, accounting for the decline of inland river navigation, a student of the situation writes:

"Mr. Bernhard may be right in stating, 'it's a case of suicide instead of murder.' No doubt he is familiar with the old saying that 'there are many ways of killing a cat besides choking it to death on cream.' The railroads realize the value of river transportation in so far as having river craft collect from distant landings freight of various kinds and deliver to the railroads at the first available point for final delivery. They appreciate the service of the river craft so highly that they foster the 'gathering' steamboat, but only for the purpose of having the boat line deposit its gleanings at the first railway crossing of the river.

"For this service they split the through rate, collect the boat's charges, deliver to the boat such goods as they may have for these remote river landings and permit the boat to pay the railway's proportion of the through charges at specified times. They go as far as they can in selecting steamboat connections. They only do this, as a rule, with one line operating regular sections of the river, but 'woe betide' the line so favored should they carry any part of their load by one of these railway crossings.

"There is no such thing as 'river competition.' Two lines of equal strength and management operating the same section of the river, one under the protecting wing of the railway and the other operating independently, making whatever rate it finds necessary—the unprotected boat could not outlive its available cash capital, while the railway boat could live, though it would not grow copulent in the business; the reason as stated by Mr. Bernhard: the absence of co-operation. The independent line cannot operate its boats on dry land, and in almost every shipment the destination of the goods exceeds the ability of the initial boat. The railway will excuse its action on the ground that the business of 'gleaning' will not support more than one line, and it is better to have one solvent partner than two insolvent ones, and they are right, but this is one of the causes that has eaten the heart out of river transportation, and, to some extent, lake transportation as well.

"The method of handling river navigation by the railroads is a work of art, clever beyond the mind of the uninitiated to conceive. I have heard these artists say in all seriousness that they were fostering the use of 'our rivers,' and they are, just as they would foster a branch line that was a feeder to their 'main,' with the exception that their river connection costs nothing for upkeep. If the boat favored by the railroad company should be tempted to carry its load by the railroad river crossing it would promptly lose its head, and its rival would be warned by the smile of this 'astute old dame.'

"If we had our rivers standardized, as suggested by Mr. Bernhard, had connecting boats whose barges could be exchanged and thus secure the continuous transit by boat, our river business would blossom as the rose, but that is a long call, judging by the progress of the last quarter of a century. This is a subject, however, so worthy that even the time to attain it should not be mentioned were there not a way whereby much of it could be saved.

"The Interstate Commerce Commission could remedy this by an order on the railroads compelling them to receive and deliver freight from connecting boat lines on the same rate basis enjoyed by the connecting railroad lines. To illustrate: The rail rate to a certain point is, we will say, \$3 per ton—a two-line haul. The rate divides at a river crossing, say, \$1.75 per ton, to the line east of the river and \$1.25 to the line west. The origin of this shipment, we will say, is on the river. The boat company would be delighted to handle this freight to the river crossing at \$1 per ton, handled in connection with the line west of the river on its established proportion of \$1.25 per ton of the through rail rate, but the line west says, 'you are a steamboat and not a railroad, and our charge to you is \$2 per ton,' and there you have the same old through rail rate.

"The remedy is simple, just and fair, giving to the river its legitimate toll, paying the delivering railroad its full measure of charges and enabling the shipper to do business on the merits of his location and not the whims of the railroad company, who by the method named not only control the rail rate, but the river rate as well."



## PLANNING BIG LUMBER MILLS.

### Kansas City Capitalists to Cut Timber on 90,000 Acres in Texas.

The Delta Land & Timber Co., I. H. Fetty, vice-president, Kansas City, has decided to build at Conroe, Tex., its big mills originally planned for Houston. It will construct a double band mill, with buildings of steel and concrete construction, kiln dry all products and handle lumber by overhead trolley system. After being graded at the kilns the lumber will be sorted into packages and stacked in a rough shed holding 10,000,000 feet. Connecting the mills and the timber land, 90,000 acres of short-leaf pine timber land in Montgomery and Walker counties, the company will build a 15-mile tram railway. It is proposed to begin manufacturing by January 1 and operate on a 20-hour basis, thus providing for about 15 years' work.

This company is a subsidiary of the Central Coal & Coke Co. of Kansas City, and it has let contract to the L. Moore Drykiln Co., Jacksonville, Fla., to erect 12 drykilns for the Conroe plant. These kilns will be 120 feet long by 20 feet wide, the buildings to be of concrete construction and the kilns to be built under the contractor's system with improved steel foundation.

### Kentucky Coke Production.

Coke is manufactured in Kentucky from coal mined in both the eastern and western parts of the State, but although the coals of eastern counties are in large part among the high-grade coking coals of the Appalachian field, most of the coke, until the last two years, has been made in the western district, which is part of the Illinois-Indiana field. Since the recent extensive coal-mining developments in the Elkhorn district of Pike and Harlan counties, however, coke ovens have been built and the principal coking activities have shifted to the eastern part of the State, and Kentucky is now assuming some importance as a coke-manufacturing State. The production has increased from less than 50,000 tons in 1909 to 191,555 tons in 1912 and to 317,084 tons in 1913. During 1913 a plant of 54 Semet-Solvay by-product ovens and 50 new beehive ovens were constructed, and by a coincidence 104 ovens were abandoned, so that the total number in existence at the close of 1913 was the same (1049) as at the close of 1912.

### 4,000,000,000 Fish Distributed.

Secretary of Commerce Redfield has just been informed by the Commissioner of Fisheries that advance reports received from the fish-cultural stations of the bureau of fisheries in all parts of the country indicate that during the fiscal year which closed June 30, 1914, the number of food and game fishes propagated and distributed by the bureau was considerably in excess of that of any previous year. The output was approximately 4,000,000,000, of which 485,000,000 represented the migratory food fishes of the Atlantic coast streams, 1,000,000,000 the commercial fishes of the Great Lakes, 2,250,000,000 the important food fishes of the North Atlantic coast, over 200,000,000 the salmon of the Pacific seaboard, and the remainder the fishes of the minor interior waters.

### For a Farm Implement Exhibit.

Colie W. Roberts, secretary, Chamber of Commerce, Rock Hill, S. C., informs the MANUFACTURERS RECORD that under the auspices of the Chamber will be held on August 21 in Rock Hill, for York county, a big farmers' convention, to which will be invited the various manufacturers of farm implements to give an exhibit of their machinery in actual operation on the ground. There will be no charges for the privilege of exhibiting.

### Underground Electric Wires in a Small Town.

An interesting feature in connection with the contract recently awarded by the town of Easton, Md., to the Wilson-Maltman Electric Co., 30 S. Charles street, Baltimore, for a municipal electric plant is the fact that the town authorities have decided to put all the lines in the business portion under ground. This is thought by the contractors to be the only small town in this section of the country that has wisely decided to put

electric wires under ground. The company's contract, amounting to \$30,000, includes building, boilers, engines, generators, pole lines, etc., and when finished, the company states, will be the most up-to-date small plant in Maryland. The bidding on this work was so close that the next lowest bid showed a difference of only \$43.

### To Manufacture Soil Pipe.

Arrangements are about completed for organizing the Dixie Pipe Co., Gadsden, Ala., as proposed by Robert Campbell. This company has secured an eight-acre site on the Louisville & Nashville Railway, and will construct a 254x120-foot main building, arranged for 16 pipe floors in units of 8, with full complement of fittings floor. Its cupola will have an inside circumference of 72 inches, and its machinery will be driven by electric power, the electricity to be obtained from the transmission system of the Alabama Power Co., Birmingham, with hydro-electric plant at Lock 12, on Coosa River. The plant building will be arranged so that future extensions can be undertaken without changing the shape of the roof.

### Armour Fertilizer Plant for Houston.

Details have been decided for the plant recently announced to be built at Houston by the Armour Fertilizer Works of Chicago. This company's plans may be briefly outlined as follows: Invest about \$150,000 for entire plant on six-acre site; erect nine buildings; largest to be 320x125 feet, four stories high, equipped with crushing and mixing machinery; also contain storage-room for 7500 tons acid phosphate; 160x80-foot building equipped with electrically-driven sulphur roasters and other machinery manufacturing sulphuric acid, crude sulphur being used; construct 300-foot wharf in 25 feet of water, office building, etc.; use about 600,000 feet of lumber; purchased all materials; plant to have annual capacity of 30,000 tons fertilizer.

### More Appalachian Forest Lands.

Lands just approved by the National Forest Reservation Commission for purchase by the Government include 13,575 acres in North Carolina, of which 11 tracts, comprising 12,400 acres, are situated in Buncombe, Yancey and McDowell counties, in the Mt. Mitchell purchase area, and the remaining 1155 acres are on the Chattooga River watershed in Macon county, in the Savannah purchase area, and 6083 acres in West Virginia, of which one tract, comprising 6000 acres, is situated in Tucker and Randolph counties, in the Monongahela purchase area, and the remaining 83 acres are on the Potomac watershed, in Hardy county, in the Potomac purchase area.

### Wheeling Steel & Iron Co.

The Wheeling Steel & Iron Co., Wheeling, W. Va., which recently announced its plan to increase capital stock from \$5,000,000 to \$7,500,000 for purchasing the Wheeling Sheet & Tinplate Co., with plant at Yorkville, O., and for betterments and enlargements, is reported as to expend \$1,300,000 for purchases and \$1,200,000 for betterments and extensions. These improvements are reported as follows: Double capacity of Yorkville plant; construct bar mill costing \$200,000; probably dismantle Top Mill furnace and build another furnace at Benwood costing \$350,000 to \$400,000; etc.

### Two Big Coal Companies Chartered.

The Buck Coal Corporation, maximum capital \$200,000, and the Stag Coal Corporation, maximum capital \$300,000, have been incorporated at Richmond, Va., the officers of each company being as follows: Leigh R. Page, president; Walter Leake, vice-president; John P. Leary, secretary and treasurer.

### A \$500,000 Marble Company.

Capitalized at \$500,000, the Tennessee Marble Corporation has been chartered for the development of a 70-acre tract of marble property near Neubert, Tenn.

W. P. Hofferbert is president, and R. F. Young, vice-president and general manager.

### Gonzales Water Power Co.

Gonzales Water Power Co., Frank S. Taylor, engineer, Austin, Tex., invites bids until July 20 to construct a reinforced concrete dam across the Guadalupe River at Gonzales. Plans and specifications can be secured at the company's offices at Gonzales and the engineer's offices at Austin. This is the initial step in the company's plan to provide five dams and a hydro-electric development to transmit 100,000 horse-power within a 60-mile radius of Seguin, Tex. Approximately \$8,000,000 is the total investment contemplated.

### The Cotton Movement.

In his report for July 10, Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight in 313 days of the present season was 14,347,403 bales, an increase over the same period last year of 710,832 bales. The exports were 8,762,442 bales, an increase of 394,290 bales. The takings were, by Northern spinners, 2,493,121 bales, a decrease of 38,042 bales; by Southern spinners, 2,919,316 bales, an increase of 205,705 bales.

### The McNicol Pottery.

The D. E. McNicol Pottery Co., Clarksburg, W. Va., has been incorporated with \$300,000 capital stock by D. E. McNicol, John A. McNicol and others, all of East Liverpool, O. This company was lately mentioned as organized to construct a seven-kiln pottery on a 10-acre site, its main building to be a two-story 520x140-foot structure, with semi-basement, costing about \$125,000. C. Metsch of East Liverpool is the architect.

### The Precooling of Fruits and Vegetables.

The railroads of the South and the representatives of citrus fruit shippers are negotiating with a view to establishing new rates on the shipment of pre-cooled citrus fruits from Florida. It is claimed that concessions will be made by the railroads, which will be of very great importance to Florida fruit interests, and that these rates will result in the establishment of pre-cooling plants in Florida.

### Opportunity for Shingle Manufacturers.

Mayfield Building & Improvement Co., El Paso, Tex., writes to the MANUFACTURERS RECORD: "We want a good composition shingle that will stand our hot sun and hard rains. Many kinds have been tried out here by us and others, and all found wanting. There certainly is made a good strong shingle that will stand up under our sun and wind and rain, but we can't find it, or haven't so far."

### To Build \$300,000 Plant.

Swift & Co., Chicago, have plans for constructing their Augusta (Ga.) cottonseed-oil mill and fertilizer factory previously announced. The oil mill is to have six presses for crushing 18,000 tons seed annually, it and the fertilizer factory to be in separate buildings and be driven by electric power from a 500-horse-power generator. About \$300,000 will be invested.

Douglas Hosiery Mills, Douglasville, Ga., has completed its plant and is manufacturing 200-needle half-hose. This company was organized in February with an authorized capital of \$25,000, and its officers are: J. T. Duncan, president-treasurer; M. E. Geer, secretary; D. W. Brown, superintendent; E. L. Rhodes (of Atlanta), vice-president.

Mayes Manufacturing Co., Mayesworth, N. C., has let contract to T. C. Thompson & Bros., Charlotte and Birmingham, to construct an additional mill building. It has an equipment of 18,684 ring spindles, 50 cards, etc.

### Foreign Trade Council.

For the purpose of co-ordinating the foreign trade activities of the nation in an aggressive and systematic extension of American overseas commerce, Mr. Alba B. Johnson, president of the National Foreign Trade convention, held at Washington last month, has announced the personnel of the Foreign Trade Council. Mr. James A. Farrell, president of the United States Steel Corporation, is named as the chairman, and the members are: Sam D. Capen, president Business Men's League, St. Louis; J. A. G. Carson, vice-president Savannah Board of Trade, Savannah; E. A. S. Clarke, president Lackawanna Steel Co., New York; Walter L. Clark, vice-president Miles-Bement-Pond Company, New York; Samuel Colt, president United States Rubber Co., Providence; Maurice Coster, foreign manager Westinghouse Electric & Manufacturing Co., New York; Robert Dollar, president Robert Dollar Steamship Co., San Francisco; Jas. A. Farrell, president United States Steel Corporation, New York; John F. Fitzgerald, chairman foreign trade committee, Boston Chamber of Commerce; P. A. S. Franklin, vice-president International Mercantile Marine, New York; Lloyd C. Griscom, New York; Fairfax Harrison, president Southern Railway Co., Washington, D. C.; H. G. Herget, president Illinois Manufacturers' Association, Chicago; James J. Hill, chairman of the board, Great Northern Railway, St. Paul; E. N. Hurley, president Hurley Machine Co., Chicago; Chas. E. Jennings, president American Manufacturers' Export Association, New York; Alba B. Johnson, president Baldwin Locomotive Works, Philadelphia; D. W. Kempner, Galveston Cotton Exchange, Galveston; Cyrus H. McCormick, president International Harvester Corporation, Chicago; Barton Meyers, president Chamber of Commerce, Norfolk; Chas. H. Muchnio, foreign manager American Locomotive Co., New York; A. H. Mulliken, Jr., president Pettibone-Mulliken Company, Chicago; M. A. Oudin, foreign manager General Electric Co., Schenectady; William Pigott, vice-president Seattle Car & Foundry Co., Seattle; Geo. M. Reynolds, president First National Bank, Chicago; Welding Ring, former president New York Produce Exchange; John D. Ryan, president Anaigamated Copper Co., New York; W. L. Saunders, president Ingersoll-Rand Company, New York; Chas. A. Schieren, Jr., president Chas. A. Schieren Company, New York; W. D. Simmons, president Simmons Hardware Co., St. Louis; Ellison A. Smyth, president Pelzer Cotton Mills, Greenville, S. C.; Willard Straight, president American Asiatic Association, New York; Stewart K. Taylor, Mobile Chamber of Commerce, Mobile; E. P. Thomas, president United States Steel Products Co., New York; F. A. Vanderlip, president National City Bank, New York; Robert H. Patchin, 71 Broadway, New York, secretary.

### Textile Notes.

Lanett (Ala.) Cotton Mills contemplate installing additional machinery.

Tulsa (Okla.) Commercial Club is negotiating for construction and equipment of a linen mill.

Parker Hosiery Mills, Frostburg, Md., will add 10 knitting machines, and plans to install 40 additional machines.

Rushton Cotton Mills, Griffin, Ga., will install 5000 additional spindles; present equipment is 15,000 spindles, 400 looms, etc.

Antietam Knitting Co.'s mill at Hagerstown, Md., was destroyed by fire last week, at a loss of about \$75,000. It is reported that the plant will be rebuilt.

The Eureka Cotton Mills, Englewood, Tenn., will about double plant, having awarded contracts for additional building and machinery. New building will be 136x76 feet, of brick mill construction, costing about \$7750, while the new machinery (3300 spindles and accompanying equipment) will cost about \$25,000.

### Association of Port Authorities.

The National Association of Port Authorities will hold its 1914 convention in Baltimore, Md., September 8, 9 and 10. This is an organization formed in New York city in 1912 for those interested in port management, financing and construction. The successful meetings at New York and New Orleans and the pending Baltimore convention emphasize the need and importance of this association to all port authorities and to those who are interested in scientifically managed and economically constructed ports and terminals.

## GOOD ROADS AND STREETS

### SOUTHERN HIGHWAY ACTIVITIES.

#### Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

#### Bonds Voted.

Jackson, N. C.—Rich Square Township of Northampton county voted \$20,000 bonds to construct roads.

Loudon, Tenn.—Loudon county voted \$50,000 addition road bonds.

Tallahassee, Fla.—City voted \$34,000 street and paving bonds.

Vanceburg, Ky.—Lewis county voted \$150,000 bonds to construct roads.

#### Bonds to Be Voted.

Clearwater, Fla.—City votes October 6 on \$18,000 to pave streets.

Erwin, Tenn.—Unicoi county votes August 22 on \$100,000 bonds to construct roads.

Henderson, Tenn.—Chester county will vote in August on \$50,000 to construct roads.

Plant City, Fla.—City will vote on \$20,000 bonds to pave streets.

Williamson, W. Va.—Mingo county votes August 11 on \$500,000 bonds to construct roads.

#### Contracts Awarded.

Birmingham, Ala.—City awarded contract to grade, macadamize, curb, gutter and pave sidewalks on certain street; cost \$1203; work includes 600 yards excavation, 500 yards cement, 150 cubic yards slag and 150 cubic yards chert.

Brunswick, Mo.—City awarded contract for 23,160 square yards vitrified vertical fiber paving blocks and 11,000 linear feet artificial stone curb.

Chattanooga, Tenn.—City awarded \$33,371.48 paving contracts.

Gadsden, Ala.—City awarded \$10,773 paving contract.

Huntington, W. Va.—Cabell county awarded contract for one mile of paving.

Jacksonville, Fla.—City awarded contracts totaling \$343,500 for paving on 25 streets.

Newton, Tenn.—City awarded contract for 5083 square yards street paving.

San Antonio, Tex.—City awarded 50 contracts, aggregating \$777,741, to pave streets.

Sedalia, Mo.—Pettis county awarded contract for one mile of rock road.

#### Contracts to Be Awarded.

Birmingham, Ala.—City will pave street; cost \$3000.

Birmingham, Ala.—City received bids until July 14 for street paving to cost \$12,000.

Danville, W. Va.—Town receives bids until July 18 to construct 8000 feet concrete sidewalks.

Denison, Tex.—City will grade and pave certain streets; cost \$7550.

Dyersburg, Tenn.—City will pave nine streets with asphalt.

Greensboro, N. C.—Irving Park Co. will construct five miles of bitulithic or tarvia streets and driveways.

Groveton, Tex.—Road District No. 2 of Trinity county receives bids until July 27 to construct sand-clay roads; about 33 miles clearing, grubbing, grading and culverts.

Lewisburg, Tenn.—City receives bids until July 25 to construct 11,000 square yards bituminous macadam, 10,000 square yards plain macadam, etc.

Marion, Ark.—Crittenden county has \$350,000 bonds available to construct roads, etc.

Marshall, N. C.—Madison county receives bids until July 23 to grade about 10.2 miles of road.

Old Fort, N. C.—Old Fort Township Highway Commission will improve 9½ miles of central highway.

Polytechnic, Tex.—City receives bids until July 20 to grade and gravel 4069 feet.

Sikeston, Mo.—City opened bids July 13 to construct about 3400 square yards concrete paving.

Springfield, Mo.—City will construct 10,000 square yards concrete paving; also construct 15,000 square yards asphaltic concrete pavement.

Tazewell, Tenn.—Claiborne county appropriated \$325,000 to construct roads.

### For a State Highway Commission.

At its annual convention last week at Durham, the North Carolina Good Roads Association was unanimous for a State highway commission and for more systematic and co-operative work in the counties. Judge A. W. Graham, who read an elaborate paper on the need of a State highway commissioner, after explaining the functions of such a State officer, showed what such departments had done for other States and presented a bill that he had prepared to be presented to the North Carolina Legislature after going over the statutes of other States. It provides for a commission of six, with the Governor as ex-officio member and chairman, the State geologist, professors of engineering at the A. and M. College and State University and two citizens to be appointed by the Governor. This commission is then to select a State highways commission with the same power as in other States, and with sufficient State support for a department of road engineers. Among those who took part in the general discussion of Judge Graham's address and proposed bill was Col. Bennehan Cameron, who told of similar bills being defeated at the last three Legislatures, but he believed that public sentiment was now such as to insure its passage. He stated that he had just seen Governor Craig, and that the latter had promised to recommend in his next message to the Legislature that provision be made for a State highway department.

Others who addressed the convention were Dr. H. Q. Alexander, president of the State Farmers' Union; George S. Powell, secretary of the Appalachian Park Association; M. V. Richards, land and industrial department, Southern Railway; D. H. Winslow of the United States Office of Public Roads; Jesse Taylor, president of the Ohio Federation for Good Roads; W. C. Hamner, president of the North Carolina Press Association; Charles P. Light, field secretary of the American Highways Association, and others.

### City and Counties Co-operate.

John T. Davis, president of the Board of Trade of Columbus, Ga., writes the MANUFACTURERS RECORD:

"The Board of Trade is using great efforts in the building of good roads. It realizes that good roads do more than anything else to make a city and county prosperous. So the Board of Trade, after conferring with adjoining counties, called a meeting at its rooms in this city July 2. At that meeting, which was attended by the commissioners of Muscogee, Chattahoochee and Stewart counties, as well as a great many other enthusiastic citizens of the three counties, the highway from Columbus to Cusseta, Richland and on to Lumpkin, Ga., was planned. Nine miles of this road in Muscogee county now in fair shape will be put in fine shape soon, 17½ miles in Chattahoochee county to be worked, for which the meeting was called, 13½ miles in Stewart county, and a large gang of men are now at work on same. From Richland to Lumpkin, a distance of 9 miles, the road is already in splendid shape. The road through Chattahoochee county proper will have to be entirely constructed. Muscogee county's engineer and road builder, J. R. Lane, will make an estimate of the cost in the next few days. Already \$6000 has been pledged toward its construction, and the balance will be raised in short order. When this gap of 17½ miles is completed it gives us a good road to Macon, Savannah, Jacksonville and other places. In a very few days we will have completed our public highway from here to Warm Springs, a distance of 45 miles. Muscogee county already has many miles of fine roads."

### To Interest Women in Highways.

A meeting of great interest and importance to farmers, manufacturers of road machinery and material, and to automobile users, has recently been held by the executive committee of the American Highway Association, at which were present representatives of the executive committee of the American Road Congress, which is to



be held at Atlanta, Ga., the week of November 9. Among those present were Mr. Leonard Tufts, chairman; Mr. Logan Waller Page, director of the United States Office of Public Roads; Mr. A. G. Batchelder, chairman executive board of the American Automobile Association; Mr. Fairfax Harrison, president of the Southern Railway Co., and Mr. Richard H. Edmonds, editor of the MANUFACTURERS RECORD.

Many matters of interest to the association and the road congress were discussed and reports were made by the officials of both organizations. Among the things agreed upon by the committee were strong steps looking to securing the lowest possible railroad rate ever given to a road congress.

One of the most important resolutions passed by the committee was that of establishing a woman's auxiliary department of the American Highway Association for the purpose of bringing together the women of the country for a concentrated movement to aid in securing the honest and efficient expenditure of road funds and to see that the roads of the country are properly maintained. It is expected that this organization of women will give added impetus to the road movement in general. Mrs. Robert Baker has been appointed by the president of the association to head this new department.

The officers of the Fourth American Road Congress reported that the exhibit space available had been nearly exhausted, and that it may become necessary to request the city of Atlanta to close and roof another street adjoining the auditorium. Indications point to an attendance breaking all previous records.

It is hoped that the Washington-Atlanta Highway, now being maintained under Government supervision, will be largely completed, at least to such an extent as to permit of tourists using their automobiles.

### Government and Good Roads.

"I do not take much stock in the movement to secure aid from the National Government for good roads," says Mr. Leonard Tufts of Pinchurst, N. C., a member of the American Highway Commission and other bodies interested in improvement of public roads, in an interview in the Charlotte Observer. "This may be all very good, but it is approaching the matter from the wrong point of view. People who are no more interested in the proposition of having good roads than to wait until their Government takes the money of the nation and builds them do not deserve the improvements. The people themselves must attend to this construction. They must take a personal interest in the project and apply themselves individually to the working out of this great problem of better roads. I have always heard that the best way to keep a child from stepping into mud was to polish its shoes. I do not believe in this prescription. The best way to keep a child out of the mud is to make the child polish its own shoes. It is the same way with this proposition of building good roads. If we wait until the Government polishes our shoes, we will find that there is no strong and abiding motive to keep ourselves out of the mud, whereas if we polish them ourselves, it will be different. My understanding of the situation is that so far very little aid is available for North Carolina and very little work under Government supervision and with Government money is in sight. A few localities may count themselves fortunate enough to have interested the National Government in the enterprise of building good roads for them, but in the end, I do not conceive that this is an economic or progressive issue. It is not a step in the right direction. There must be a sentiment for good roads just as there is sentiment for any other good thing, and the only way to get this is to make the people provide with this improvement."

### Big Paving Contracts.

The city of Jacksonville, Fla., is about to begin paving on 25 streets, and \$343,500 is the amount of the contracts. There are six contracts, awarded to five contractors, for vitrified brick, Dolanway, asphaltic concrete, etc.

Fifty contracts for street paving, the total amount being \$777,741, were awarded last week by officials of the city of San Antonio, Tex. They specify asphalt, bitulithic, etc., and were obtained by nine different contractors who submitted proposals in accordance with recent invitations for bids.

## RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

### \$50,000,000 RAILWAY BONDS.

#### Piedmont & Northern Preparing for Further Extension of Interurban System.

The interurban railways built in North and South Carolina by J. B. Duke and others have been merged under the name of the Piedmont & Northern Railway Co., and have filed a mortgage to secure \$50,000,000 of 5 per cent. 40-year bonds, the Farmers' Loan & Trust Co. of New York being trustee and the proceeds of the securities being designed for the construction of extensions and branches, betterments, etc., in addition to payment of the purchase money of the present lines by the railroad company, equipment, real estate, etc. It is expected at Charlotte, where the headquarters are situated, that a further extension and more improvements will be made soon.

Heretofore there have been two companies for these electric railways, the Piedmont Traction Co., operating between Charlotte and Gastonia, N. C., 23 miles, and the Greenville, Spartanburg & Anderson Electric Railway Co., operating between Spartanburg, Greenville, Anderson and Greenwood, S. C., 102 miles. It will require the construction of about 50 miles of line through difficult country to connect the two divisions of the system by an extension from Gastonia to Spartanburg. It is also proposed to extend northward from Charlotte to Concord, N. C., about 25 miles, and possibly farther to Salisbury, Greensboro and Durham, which would demand the building of 150 miles more of new railroad, although construction beyond Concord may be deferred for a considerable time.

J. B. Duke of New York is president of the line; W. S. Lee of Charlotte, vice-president, and E. Thomason, treasurer and general manager. W. C. Murphy is superintendent.

Fulfillment of the plans as here outlined will provide an extensive system of interurban electric railways through a rich cotton-mill district of the Carolinas. Already the company has built and is now operating 125 miles of lines, with fine high-speed passenger cars, and it is also conducting freight service, interchanging business with the steam railroads. It seems to be understood at Charlotte that further construction will begin with the proposed lines northward from there, although work between Gastonia and Spartanburg may be started soon thereafter. Already it is reported that plans for a short extension from Gastonia to Kings Mountain are under consideration.

### SOUTHERN RAILWAY'S FUTURE.

#### A Policy of Progress and Liberal Provision Urged by the Voting Trustees.

The voting trust for the stock of the Southern Railway, which has been in existence since the organization of the company in 1894, has been dissolved. In giving notice of such dissolution the voting trustees have issued to the stockholders a circular, in which they say:

"Since October 15, 1894, the trustees under the voting trust agreement have represented certificate holders primarily in the nomination of the board of directors and in voting on propositions recommended by the board for the provision of new capital. In view of the company's present physical strength, conservative management and excellent physical condition, the trustees believe that the time has now come when they may properly and safely terminate the trust. In surrendering it to the stockholders they have the satisfaction of reporting a gratifying development of the system of railroads coincident with the extraordinary and steadily increasing growth in population, industrial development and wealth of the territory served, a development largely due to the activities of the Southern Railway Co. in promoting commerce and industry along its lines.

"In surrendering our trust, we do so with confidence that the territory served by the Southern will continue to increase in population, industry and wealth, and that the company will share in such prosperity. From a disjointed collection of incomplete single-track lines the system will have been developed into an efficient

double-tracked railroad for the entire main line from Washington to Atlanta, with adequate shops and terminals at the principal cities of the entire territory served, all well adapted to meet the requirements of the prosperous and growing communities which the system serves. We commend, therefore, to the stockholders the continuance of the policy of progressive betterment which has been constantly urged by the management since the company's organization, and to that end that there shall be liberal provision of new capital. It is the true policy of the company to lead, rather than to follow, in the future development of the South, and to maintain its reputation and its past achievements in such leadership."

### BALTIMORE & OHIO'S YEAR.

#### Gross Revenues Declined More Than \$4,000,000, But Regular Dividends Are Maintained.

At the recent meeting of directors of the Baltimore & Ohio Railroad Co., at which it was decided to declare the regular semi-annual dividends of 2 per cent. on the preferred shares and 3 per cent. on the common shares, there was submitted a statement of the year's operations to June 30 (that month being estimated) and showing total operating revenue \$97,410,138, decrease as compared with the last fiscal year \$4,145,994; total operating expenses \$72,053,286, decrease \$1,726,352; net operating revenue \$25,356,852, decrease \$2,419,642; outside operations, deficit, \$909,088 (increase \$54,777); total net revenue \$24,447,764, decrease \$2,454,419; operating income after taxes accrued \$21,221,941, decrease \$2,719,337; gross corporate income \$27,145,076, decrease only \$2,008,408, there having been an increase in "other income" of \$710,929; net income after deductions, interest, etc., \$9,069,795, decrease \$4,264,456.

Expenses were augmented by extraordinary charges amounting to \$2,112,085 for permanent reconstruction made necessary by the floods of March, 1913. Restoration of the property damaged has now been completed and practically all charges on this account have been disposed of, it being thought preferable to charge these expenses out at present rather than to extend them over a series of years. It may also be observed that to pay the dividends \$2,469,095 will be taken from accumulated surplus, the total amount required being \$11,538,888. Another charge made against surplus is \$909,272 for interest accrued but not collected during the year on advances made to the Cincinnati, Hamilton & Dayton Railway.

### \$5,000,000 NEAR MEMPHIS.

#### Illinois Central's Plans for Shops and Yards—Station Nearly Ready.

The shops which the Illinois Central Railroad and its subsidiary, the Yazoo & Mississippi Valley Railroad, will build at the Nonconah yards immediately south of Memphis, Tenn., will, according to a report from there, be the largest on that system south of Chicago. When they are completed they will give employment to 4000 men. The roundhouse is finished and other provisions have been made to handle necessary repair work pending the construction of larger buildings of sufficient dimensions to care for increasing work in the future. It is intimated in connection with this report that there will be a concentration of repair forces at the new shops. Five million dollars is the estimated cost of these improvements.

Construction of the Illinois Central's new passenger depot in Memphis is fast approaching completion, and it is to be ready for use August 1. The company is also laying second track in the vicinity of that city, and is furthermore installing long passing sidings on other parts of its line, which will give it increased traffic capacity. A freight track 10 miles long is being built from Swan Lake to Murphy, Miss. Concerning the Nonconah yards, the importance of the improvement there is emphasized by the fact that they are about 2½ miles long.

### New Equipment, Etc.

United Railways & Electric Co. of Baltimore is receiving deliveries on order for 85 semi-convertible prepayment cars built by the J. G. Brill Company, Philadelphia.

Missouri Pacific Railway has ordered 4700 tons of

rails from the Tennessee Coal, Iron & Railroad Co., Birmingham.

Southern Railway is reported in the market for 37,000 tons of rails.

Pennsylvania Railroad has awarded rail contracts for 1914 thus: United States Steel Corporation, 44,000 tons; Pennsylvania Steel Co., 22,000 tons; Cambria Steel Co., Johnstown, Pa., 22,000 tons; Lackawanna Steel Co. and Bethlehem Steel Co., each 6000 tons. There will be 15,000 tons of 120-pound section, but all the rest will be 100-pound.

Jefferson Construction Co., Hamlet, N. C., has ordered 2500 tons of rails from the Pennsylvania Steel Co.

Mobile & Baldwin County Railroad, M. H. Miller, president, Mobile, Ala., is reported to have placed an order for a gasoline electric motor car.

Norfolk & Western Railway has received 5 Mallet locomotives from the Baldwin Works, Philadelphia. There are 45 more to be delivered.

Pennsylvania Railroad will build 1000 all-steel box cars in its own shops.

Jacksonville Terminal Co. has ordered 500 tons of rails from the Pennsylvania Steel Co.

Tampa & Gulf Coast Railroad has received 3 locomotives from the Baldwin Works.

St. Louis & San Francisco Railroad is reported in the market for 10 locomotives.

Southern Pacific Company, according to a market report, is getting prices preliminary to awarding contracts for 2000 box cars, 850 stock cars, 400 flat cars, 250 gondola cars, 330 tank cars, 20 cabooses and 150 flat-car bodies.

Southern Railway has ordered 15,000 tons of rails from the Tennessee Coal, Iron & Railroad Co.

Rock Island lines have ordered 17,000 tons of rails from the Colorado Fuel & Iron Co., Trinidad, Colo.

### Engines to Receive Names.

Engineers of the Southern Railway Co. who have made exceptionally good records in keeping their locomotives in condition are to be honored by having their names painted on the panels of the cabs. In announcing this plan, E. H. Coapman, vice-president and general manager, says it has been adopted as a mark of the company's appreciation of the interest which its engineers have taken in the condition and appearance of their respective engines. The practice is, as far as possible, to allow each regular "runner" to have his individual locomotive. The engineers feel personal pride in the appearance of their locomotives, and many of the machines have been beautifully decorated, in which efforts the company has co-operated, and as a result of their improved appearance the engines have attracted attention and elicited favorable comment. Under the new arrangement each engineer who has run a particular locomotive for a stated number of miles, rated according to the class of the engine, without its going into the shop for general overhauling, will have his name placed on its cab panel. The plan was effective July 1, but mileage made during the past two years by engineers running individual locomotives will be considered.

### Addition to Locomotive Shop.

The Norfolk & Western Railway Co. has awarded contract to the Virginia Bridge & Iron Co. of Roanoke, Va., to furnish steel work for an extension of the engine erecting shop there. The railway company's forces will build the foundations of the extension and erect it. The main building is 191 feet long, 80 feet wide and 68 feet high. There will be a lean-to on one side two stories high, 191 feet long, 28 feet wide and 48 feet high. This will have concrete foundations, and there will be a concrete floor in the upper story of the lean-to, which will be used as a cab shop. It will have steel frame, steel trusses, slate roof, with skylight and brick walls in part. The erecting shop will be equipped with a 100-ton Niles crane, one 15-ton crane and engine drop pits. The lean-to will be equipped with one 5-ton crane in the cab shop and one 10-ton crane in the lower portion. The approximate cost, without the cranes, is \$70,000. Construction will be under the supervision of J. E. Crawford, chief engineer.

### Details of Dallas Terminal.

J. W. Thompson, Boatman's Bank Building, St. Louis, who was awarded the contract for the construc-

tion of the new station at Dallas, Tex., by the Dallas Union Terminal Co., says that the estimated cost of the completed work is figured at about \$3,000,000. Construction is to begin immediately, and is to be finished within 20 months. It consists of a union depot, a train shed, a roundhouse, a coach shed, etc. The grading necessary for tracks will approximate 700,000 to 800,000 yards of material. The tracklaying, interlocking, etc., is also included in the contract.

The contractor who will have direct charge of the erection of buildings is the firm of Hughes & O'Rourke, Praetorian Building, Dallas, Tex. The remainder of the work will be handled by Mr. Thompson through such organization as he may create for the purpose.

The terminal is designed to serve eight railroads entering Dallas, as follows: Texas & Pacific, Missouri, Kansas & Texas, Atchison, Topeka & Santa Fe, Trinity & Brazos Valley, Chicago, Rock Island & Pacific, St. Louis Southwestern, Southern Pacific and St. Louis & San Francisco.

### "Orient" Railway Reorganization.

Progress toward the organization of a new company and the resumption of construction on the Kansas City, Mexico & Orient Railway has been halted by the granting of a temporary injunction in Kansas to prevent the issue of new securities as proposed by the reorganization committee. This injunction was asked on behalf of creditors of the old company, claiming that the issue of new notes, bonds, etc., would be to their detriment. The Western Union Telegraph Co. obtained the injunction.

The bondholders' committee, which bought in the property at the recent receiver's sale, proposes to issue \$5,500,000 of 6 per cent. two-year notes, besides stocks and bonds to the total amount of \$75,000,000 or \$80,000,000. W. T. Kemper, president of the Commerce Trust Co. of Kansas City; A. M. Wickwire and John B. Nevin of New York are actively interested, besides, according to a report from St. Louis, Chas. H. Jones of New York, who is concerned in the underwriting of the notes.

### To Complete Electric Railway.

A report from Dallas says that the electric railway line of the Eastern Texas Traction Co., which has been graded from there to Greenville, 52 miles, will be completed by the Stone & Webster Engineering Corporation of Boston, represented at Dallas by E. T. Moore, district manager. Work is to begin immediately under a contract recently made. F. E. White is president, and J. W. Crotty, vice-president and general manager of the traction company.

It is stated that, in addition to the grading, there have been completed the bridges and culverts, this work having been done by Karner Bros., the general contractors. Tracks will now be laid and ballasted, trolley wires will be erected, and power stations and depots will be built.

### Several Contracts Let.

Contract has been awarded by the Southern Railway Co. to J. P. Pettyjohn & Co. of Lynchburg, Va., to build a brick passenger station, with tile roof, at Reidsville, N. C. The building will be 22x100 feet, and will have separate waiting-rooms for white and colored people. Heating will be by steam and lighting by electricity. The General Fire Extinguisher Co. of Charlotte, N. C., has been given the contract for installing the heating system. At North Birmingham, Ala., the same railroad has awarded contract to T. S. Moudy & Co. of Chattanooga to construct washrooms and locker-rooms at the Finley Yard.

### Now a Common Carrier.

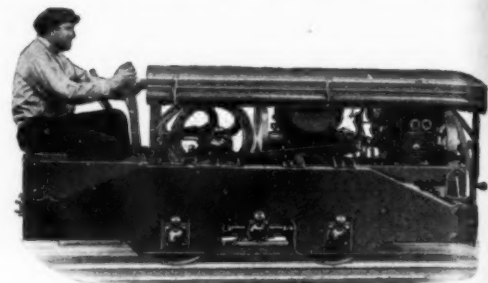
The Chicora & Northwestern Railroad, operating from Robinson's Junction, on the Mobile & Ohio Railroad, to Clara, Miss., 9½ miles, has begun operations as a common carrier. It has been run for some time as a logging railroad by the Robinson Land & Lumber Co., of which J. T. McIntosh is vice-president and general manager. J. T. Ward is general manager for the railroad.

## MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

### "Plymouth" Industrial Locomotives.

To meet the demand for cheap transportation and haulage around mines, clay plants and other industrial plants, the "Plymouth" gasoline locomotive has been



"PLYMOUTH" GASOLINE INDUSTRIAL LOCOMOTIVE WITHOUT CAB.

developed by the J. D. Fate Company of Plymouth, O., and is built for various gauges in sizes of 2½ to 3 tons, with or without cab, as shown in the accompanying illustration.

The motive power is furnished by direct opposed two-cylinder type air-cooled gasoline engine of 5-inch bore and 4¾-inch stroke, developing 18 horse-power with mechanically-operated valves and internal lubricating system. The motor crank case is of rigid construction, with strong crankshaft and steel connecting rods. The motor flywheel is of large diameter, and, operating as a fan, adds to the cooling of the motor.

The power is conveyed from the motor to the traction



"PLYMOUTH" GASOLINE INDUSTRIAL LOCOMOTIVE WITH CAB.

wheels of the locomotive by friction drive transmission and sprocket and chain to rear axle. The driving wheel or disc is made of special metal alloy faced with paper fiber, which can be easily and quickly replaced.

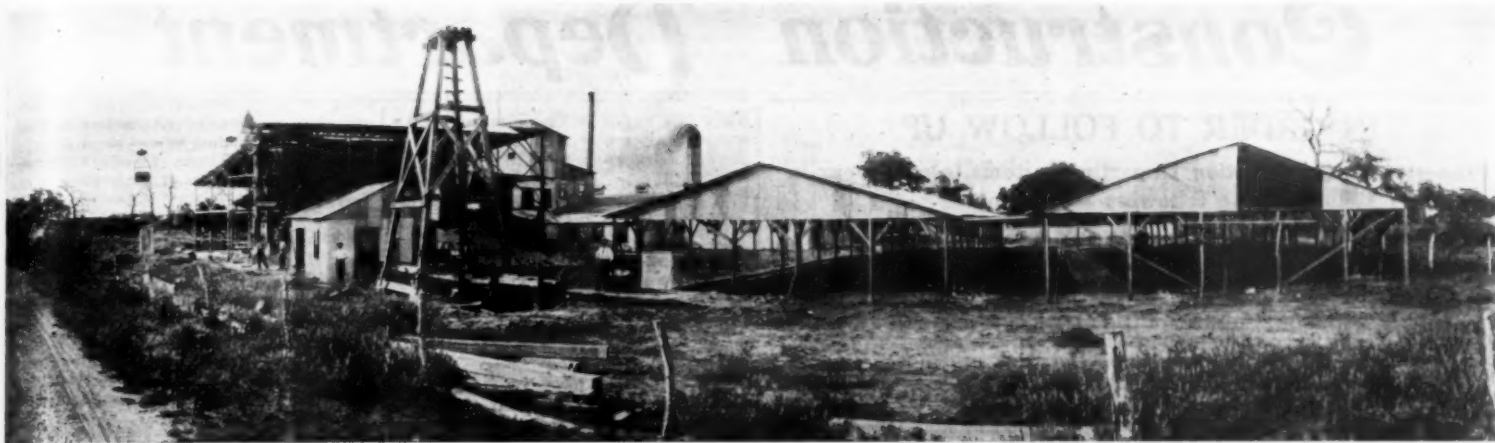
Every part of the locomotive is accessible, and any part may be easily removed when necessary. All machinery is covered, and curtains are so arranged so as to let down when locomotive is left out of doors or not in use. The locomotive is made without cab to be used for mines and other space where the height of overhead space is limited.

### An Aerial Tramway for a Texas Clayworking Plant.

The Star Clay Products Co. of San Antonio, Tex., has just completed the installation of an up-to-date method of transportation for bringing in the fire-clay from its mines to the factory, located at Elmendorf, Tex. The distance from the clay mines to the plant is 4½ miles, crossing fields, pastures, highways and a large river. With this system of aerial tramway the company is enabled to haul clay at a minimum cost from mine to factory, and under most any kind of weather conditions.

The aerial tramway consists of a series of towers and





PLANT OF STAR CLAY PRODUCTS CO. AND RECEIVING END OF TRAMWAY.

stations, built of heavy timber, situated from 400 to 500 feet apart, supporting two heavy wire cables,  $1\frac{1}{4}$  and 1 inch in diameter, on which the loaded tramway buckets and carriages travel from the mine to the discharge station at the plant, and another cable is utilized for the empty carriages and buckets to return to the loading station.

The carriage, which consists of two large sheave

it is automatically dumped, and transfers itself automatically to the return line for another load. The continuous stream of buckets going in on one line and going out on the other, with 140 of these buckets in use, makes a most satisfactory method of clay haulage.

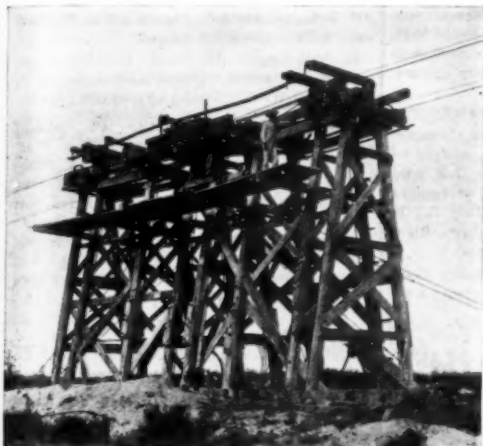
The tramway track cables, saddles for towers, sheave wheels and carriages with gripping device and tramway buckets were made by the John A. Roebling's Sons Company of Trenton, N. J. Some of the three-quarter-inch transmission cable was supplied by the American Steel & Wire Co. of Chicago, Ill.

There is in use  $4\frac{1}{2}$  miles  $1\frac{1}{4}$  inch and 1 inch tramway track cable, and over nine miles of moving three-quarter-inch transmission cable. The motive power used in moving these miles of cable, bringing in and carrying out the buckets and carriages, is a 250-horse-power stationary double-cylinder two-drum tramway

### Economically Operated Rock and Limestone Crushing Plant.

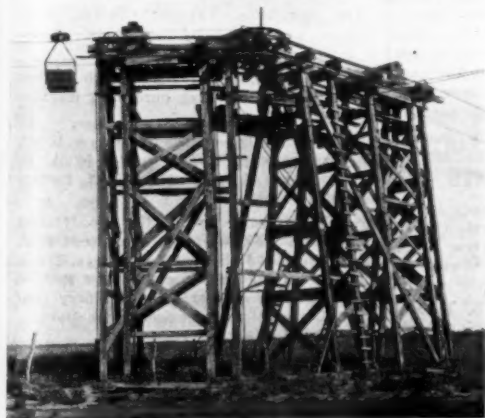
An economical crushing plant for townships, villages, contractors and owners of private drives who use a comparatively small quantity of crushed rock, as well as for farmers desiring to reduce limestone to a product fine enough for fertilizer purposes, has been perfected by the Good Roads Machinery Co., Kennett Square, Pa. The rock-crushing plant, known as "F-2," as shown in the illustration, combines features of low first cost, convenience in moving and in operation, durability and all-around serviceability.

The crusher is of steel construction, and the entire outfit, which is mounted on a steel truck and driven by eight-horse-power engine, weighs four tons. The crusher has a receiving opening of 8x12 inches, and will



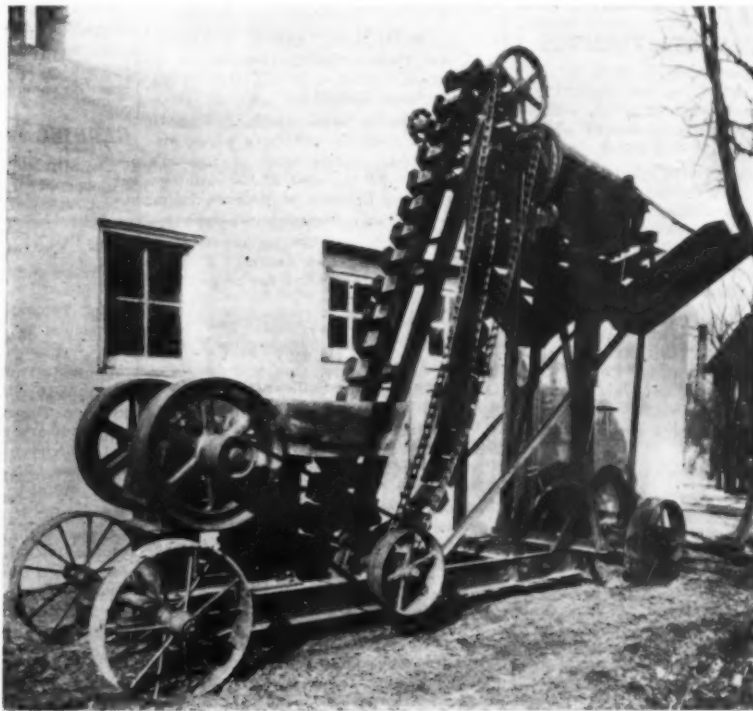
ELEVEN-DEGREE ANGLE STATION.

wheels housed in a heavy cast frame, supports the bucket hanging underneath, and is attached to an independent transmission wire cable which travels over and around the entire system, moving continuously. The



FORTY-FIVE-DEGREE ANGLE STATION.

buckets are attached and detached automatically. Each bucket holds 10 cubic feet of clay, which is equivalent to 1000 pounds. The buckets are so placed on the line that one reaches the discharge station every minute, transporting 600,000 pounds of clay per day of 10 hours. When the loaded bucket arrives at the discharge station



TYPE "F-2" ROCK-CRUSHING PLANT.

engine, especially built for the purpose by S. Flory Manufacturing Co. of Bangor, Pa.

The line is said to be exceptional from an engineering standpoint, in that it has two turns to make in going from the mines to the plant, because a straight right of way could not be secured. One of the turns is at an angle of 45 degrees, and is 45 feet above the ground, and the other is an 11-degree turn, which is 35 feet above the ground. Both angle stations are shown in the accompanying illustrations.

The entire work of installation, as well as the re-designing of the tramway and the angle stations, was done by J. R. Martin, secretary and treasurer and general manager of the Star Clay Products Co.

produce from four to six tons of material suitable for road work in an hour.

When fitted with special dies, the "F-2" crusher will produce economically a considerable amount of crushed limestone to a fineness suitable for agricultural purposes.

Geo. M. Flint of Cambridge, Mass., of the geological museum of Harvard University, who has been in Little Rock, Ark., with his headquarters at the Board of Trade, is enthusiastic over the granite mountains of Little Rock and the bauxite mined near this city, and he is making a careful examination of the local geological situation in general.

# Construction Department

## IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

### EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

### HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

### WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

### DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

### BRIDGES, CULVERTS, VIADUCTS

Ark., Little Rock.—Chicago, Rock Island & Pacific Ry., C. A. Morse, Ch. Engr., Chicago, Ill., will build viaduct across tracks on E. 6th St.; reinforced concrete; width 60 ft.; clearance 14 ft.; cost \$12,000.

Ark., Magnolia.—Columbia county will construct 7 bridges and 3 levees; W. A. Kelley, County Judge, invites bids. (See Miscellaneous Construction.)

Ark., Marion.—Crittenden County Comms. have \$350,000 bonds available to construct approach to J. T. Harahan bridge and build roads.

Fla., Fort Lauderdale.—Duval County Commissioners, Miami, will invite bids to construct steel rolling lift bridge 170 ft. long over New River at Fort Lauderdale; 18-ft. roadway; two 6-ft. sidewalks; 60-ft. clear space under lift; estimated cost \$15,000 to \$20,000.

Fla., Milton.—Santa Rosa County Comms. voted to construct 2 bridges, 1 across Blackwater River at Milton and other across Escambia River at Chumuckla; latter will connect Santa Rosa and Escambia counties, but will be paid for entirely by Santa Rosa county.

Ky., Louisville.—Government will construct direct lift bridge over Louisville and Portland Canal at 18th St.; bids until July 15; J. C. Oakes, Major, Engrs. (See Machinery Wanted.)

Ky., Whitesburg.—Roscoe Hay of Goeneville, Ind., representing Central Steel & Iron Construction Co., Evansville, Ind., is preparing plans for 5 steel bridges in Letcher county—3 across Kentucky River, 1 across Cumberland River and 1 across Rockhouse Creek.

La., New Orleans.—Commission Council adopted ordinance directing engineering department to prepare plans and specifications for construction of lately-noted lift bridge across New Basin Canal on line of City Park Ave.; W. J. Hardee, City Engr.

N. C., Mt. Holly.—Gaston and Mecklenburg counties will construct steel bridge across Catawba River at Mt. Holly; includes 2 spans 200 ft. long with steel approach at each end; 16-ft. clear roadway; floor to be 35 ft. above water; substructure concrete and cylinder piers; \$20,000 appropriation; bids until July 30; plans and specifications at offices of Board of Mecklenburg County

Comms., W. M. Long, Chrmn., Charlotte, N. C., and Gaston County Comms., O. G. Falk, Chrmn., Gastonia, N. C.; lately noted. (See Machinery Wanted.)

N. C., Winston-Salem.—Comms. Forsyth and Yadkin counties will have plans prepared for steel bridge north of Conrad's Ferry; length 900 ft.; cost \$25,000. Address Forsyth County Comms. at Winston-Salem.

Okla., Tulsa.—City Comms. and Tulsa County Comms. considering construction of concrete bridge across Arkansas River to cost \$200,000; interurban railway to pay part of cost.

Okla., Tulsa.—Tulsa County Comms. invite bids to construct 4 bridges on Wekiwa Rd. to cost \$7500.

Tenn., Blountville.—Sullivan County Commissioners, Blountville, and Hawkins County Comms., Rogersville, have each appropriated \$4500 toward construction of bridge across Holston River at Rotherwood, 3 mi. from Kingsport.

Tenn., Huntingdon.—Carroll County Comms. are reported contemplating erection of 2 bridges, 1 probably of iron at Terry and other over Obion River at Christmansville Turnpike; latter to be about 975 ft. long, portion across river to be probably of iron and remainder of wood.

Tenn., Nashville.—Bridge Committee authorized to negotiate new contract for completion of bridge across Richland Creek at Rosley Springs; \$27,000 has been expended and \$10,000 additional will be required; H. E. Howse, Mayor.

Tex., Dallas.—Dallas County Comms. ordered bids advertised on erection of 3 bridges—drawbridge across Trinity River at extension of intersection of river with Trinity Heights and Packinghouse Rd. to cost \$30,000, and 2 smaller bridges, one across river on Geo. K. Meyer Rd. and other at Carrollton Dam, each to cost \$10,000.

Tex., Dallas.—Gulf, Colorado & Santa Fe Ry., F. Merritt, Ch. Engr., Galveston, Tex., does not contemplate improvements in connection with viaduct over tracks at S. Merlin St. this year. (Lately reported.)

Tex., Fredericksburg.—Oscar Krauskopf is promoting erection of bridge over Pedernales River on Austin Rd.

Tex., Houston.—City will have plans prepared by J. J. Milton, Municipal Structural Engr., to prepare designs for 2 bridges—over

White Oak Bayou at Taylor St. and Little White Oak Bayou at Wrightwood Ave.; reported cost \$20,000 each.

Tex., Lockhart.—City let contract Herman Bros., Yoakum, Tex., at \$2368 to construct wagon and foot bridge over Town Branch.

Tex., Oakville.—Live Oak county is reported to vote in August on \$100,000 bridge and road bonds. Address County Comms. (See Road and Street Work.)

Tex., San Antonio.—City let contract Bexar Construction Co. at \$8390 to construct bridge over Azean Creek.

Tex., Texarkana.—Bowie County Comms., Boston, and Cass County Comms., Linden, will construct bridge across Sulphur River at Pace's Ferry, about 12 mi. from Texarkana.

Tex., Waco.—McClennan County Comms. contract with McCall-Moore Engineering Co., Waco, consists of work scattered over about 125 mi. road; includes headwalls, etc., and bridges up to 36-ft. span; approximate quantities 4678 cu. yds. earth excavation; concrete, 5785 cu. yds.; reinforcing bars, 60 tons; I-beam channels, 227 tons; vitrified pipe, 1080 lin. ft.; corrugated pipe, 840 lin. ft.; galvanized-iron pipe, 3546 lin. ft.; cost \$80,000. (Contracts lately noted let to above company and to Richard Morey, St. Louis, for bridge construction.)

Va., Dillwyn.—Buckingham county will construct bridge over Slate River; bids at Courthouse, Buckingham, July 24; bridge 286 ft., with 12-ft. roadway; concrete substructure; steel superstructure—one 50-ft. truss to be moved and erected on new location; G. P. Coleman, State Highway Commr. (See Machinery Wanted.)

Va., Palmyra.—Fluvanna County Comms. will construct steel bridge across Cunningham Creek; 122 ft. 9 in. long; consists of one standard 70-ft. span and three 17-ft. 6-in. spans; 12-ft. roadway; concrete or cement rubble substructure; bids until July 22; P. St. J. Wilson, State Highway Commr., Richmond, Va. (See Machinery Wanted.)

W. Va., Wellsburg.—Brooke County Commissioners will invite bids to construct 3 reinforced concrete bridges.

### CANNING AND PACKING PLANTS

Fla., Bramlet, P. O. at Tampa.—Farmers' Union is reported to build cannery, packing plant, store and warehouse; erect building 40x135 ft.

Fla., Clearwater.—Fugassi Bros. are reported to build packing plant in Milton Park.

Fla., Yalaha.—R. F. Kleiser is reported as contemplating erection of packing plant.

Mo., Fair Play.—Fair Play Canning Co. organized; D. A. Hamby, Prest.; J. A. Lanning, V.-P.; M. T. Easley, Secy.; R. J. Poynter, Treas.; is erecting 24x80-ft. building; ordinary construction; cost of machinery (purchased) \$2000; daily capacity 20,000 3-lb. cans tomatoes. (Lately noted inceptd., \$5000 capital.)

Tex., Beaumont.—Brown Fig Co., Thos. Brown, Prest., Fig Ridge (P. O. at Stowell), contemplates installing plant to finish figs for market, especially that class of figs marketed in glass; plans to increase capital stock from \$6000 to \$20,000, larger part to be used in installing plant.

### CLAYWORKING PLANTS

W. Va., Black Betsy.—Granite Block & Tile Mfg. Co., T. W. Woodward, Prest. (lately noted inceptd.), will install concrete block and tile machinery. (See Concrete and Cement Plants, W. Va., Charleston.)

W. Va., Clarksburg.—Pottery.—D. E. McNicol Pottery Co., authorized capital \$300,000; inceptd. by D. E. McNicol, John A. McNicol and others, all of East Liverpool, O.; will construct 7-kiln pottery on 10-acre site; \$20x140-ft. main building, 2 stories, with semi-basement, costing about \$125,000; Archt., C. Metach, East Liverpool. (Lately noted organized, etc.)

### COAL MINES AND COKE OVENS

Ala., Yolande.—Yolande Coal & Coke Co. (general office Birmingham) is reported to expend \$25,000 to \$30,000 in improvements, to include installation of motors to operate mines at Yolande and Abernath, opening of

new slope at Yolande and erection of 4 or 5-room school building to cost about \$3000.

Ky., Louisville.—Perry County Collieries Co. (W. J. Von Borries of Louisville and H. C. Thompson of Darbyville, Va.) will develop coal mines on First Creek in Perry county.

Ky., Logmont.—Lower Hignite Coal Mining Co. (lately noted inceptd., capital \$30,000) organized; A. H. Rennebaum, Prest.; W. E. Gunn, Secy.-Treas.; develop 700 acres; installing mine of 400 tons capacity.

Okla., Nowata.—Cole Oil & Gas Co., capital stock \$12,000, inceptd. by Loyd Cole, Nowata; John Cole, Stillwater; C. E. Cole, Prairie Grove, Ark.

Tex., Kennedale.—Melvin C. Churchill, Fort Worth, Tex., plans organization \$100,000 stock company to drill for coal, iron, oil, mica, etc., on his farm near Kennedale. (See Machinery Wanted.)

Va., Richmond.—Buck Coal Corp., maximum capital \$200,000, chartered; Leigh R. Page, Prest.; Walter Leake, V.-P.; John P. Leary, Secy.-Treas.

Va., Richmond.—Stag Coal Corp., maximum capital \$300,000, inceptd.; Leigh R. Page, Prest.; Walter Leake, V.-P.; John P. Leary, Secy.-Treas.

W. Va., Clothier.—Spruce Fork Coal Co. (lately noted inceptd., capital stock \$50,000, by Wm. Bell Watkins, Cheney, Pa., and others) is reorganization of Spruce Fork Co., Wm. Dignan, Jr., Secy.-Treas., 250 Bullett Bldg., S. 4th St., Philadelphia, Pa.; no materials or supplies needed.

W. Va., Logan.—Big Eagle Coal Co., capital \$100,000, inceptd. by Geo. J. Beddow, J. B. McCorkle, W. H. Tidman and others.

West Virginia.—Clifton Coal Co., capital \$100,000, inceptd. by L. A. Burnett, Thos. Watson, J. J. Harter and others, all of Pittsburgh, Pa.; acquired property of Brooke County Coal Co., comprising 3000 acres coal and 220 acres surface land in Brooke county; mine now opened on property, with electric equipment, having daily capacity 2000 tons; open another mine equal capacity, making total daily output 4000 tons.

### CONCRETE AND CEMENT PLANTS

Tex., San Antonio.—Silos, etc.—Modern Concrete Co., 516 Gibbs Bldg. (lately noted inceptd., \$1500 capital stock), organized; R. L. Webb, Prest.; E. G. Hicks, Secy.-Treas.; W. D. Ham, V.-P. and Mgr.; products: silos, walks and lawn ornaments.

W. Va., Charleston.—Block, Tile and Pipe. Granite Block & Tile Mfg. Co. inceptd.; T. W. Woodward, Prest.; G. C. Morris, V.-P. and Mgr.; R. W. Woodward, Secy.; O. F. Payne, Treas.; erect 30x60-ft. mill-construction building; install concrete block and tile machinery (purchased) costing about \$2000; manufacture cast granite faced block, tile and sewer pipe.

### COTTON COMPRESSES AND GINS

Ark., Morrilton.—Farmers' Gin Co., N. B. Skipper, Mgr., will build 4-stand gin. (Lately noted organized.)

N. C., Waxhaw.—Rodman-Heath Cotton Mill will erect gin; purchased machinery.

Okla., Boynton.—Farmers' Gin & Grain Co., capital stock \$10,000, inceptd. by A. C. Trumbo, John H. Mosher and R. A. Patterson, all of Muskogee.

S. C., Inman.—Inman Gin Co. (lately noted inceptd., \$5000 capital) organized; S. P. Clark, Prest.; J. H. Ballenger, Secy.-Treas. and Mgr.; install 6-70-saw gins, cost \$5000 to \$6000; building erected and machinery contracted, except steam engine. (See Machinery Wanted.)

S. C., Moselle, R. F. D. from Islandton.—Farmers' Union Ginning Co. organized; J. H. Varn, Prest.; J. S. Sanders, Secy.; H. M. Wood, Treas.; will operate established gin. (Lately noted inceptd., \$5000 capital.)

Tex., Caldwell.—C. B. Oliver and others are reported to build gin.

Tex., Corpus Christi.—Corpus Christi Compress Co., capital stock \$50,000, inceptd. by Thos. Bell, W. W. T. Bynum and W. E. Pope.

Tex., Pleasanton.—Farmers' Union Gin Co. is reported to build gin at North Pleasanton.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.



## COTTONSEED-OIL MILLS

Ala., Birmingham.—Magic City Oil Co., capital stock \$75,000, incptd. to build cottonseed-oil mill; S. B. Brown, Prest., Albany, Ga.; A. P. Coles, V.-P., Atlanta, Ga.; E. Y. Conklin, Secy., Birmingham; R. G. Riley, Gen. Mgr., Albany, Ga.

Ga., Augusta.—Swift & Co. (main office, Chicago, Ill.) will construct cottonseed-oil mill with 6 oil presses having annual capacity to crush 18,000 tons seed; electric power; 500 H. P. generator; this mill and fertilizer factory to cost \$300,000. (See Fertilizer Factories.)

Miss., Aberdeen.—Monroe County Cotton Oil Co., S. K. Yarbrough, Mgr., succeeds Aberdeen Oil & Ice Co., Aberdeen Milling & Mfg. Co. and People's Oil & Fertilizer Works.

Tex., Marshall.—Marshall Cotton Oil Co., capital stock \$50,000, incptd. by P. H. Manire, W. L. Martin and E. Key.

## DRAINAGE SYSTEMS

Fla., Clearwater.—City votes Oct. 6 on \$500 bonds for drainage canal; J. R. Jeffords, Mayor. (See Road and Street Work.)

Fla., St. Augustine.—St. John County Commissioners are considering organization of drainage district to reclaim 5000 acres near Elkton.

La., Donaldsonville.—Smoke Bend Drainage Dist. of Ascension parish voted \$10,500 bonds for drainage system. Address Drainage Dist. Commrs.

La., White Castle.—Iberville Parish Police Jury, Plaquemine, La., created White Castle Drainage Dist. and appointed Simon Levy, Charles Olano and C. O. Whaley as Commissioners; district will drain town of White Castle and lands to west of town.

Miss., Attala County.—Drainage Com., F. Z. Jackson, Chmn., Kosciusko, Miss., let contract M. C. McGinnis & Co., Memphis, Tenn., at about \$30,000 to straighten Yockanookany River for distance of 10 mi., reclaiming 3400 acres land in Attala county; Tupelo Engineering Co., Tupelo, Miss., in charge of engineering.

Mo., Doniphan.—Drainage Dist. No. 2, Ripley county, will soon let contract to dig drainage ditch; Chas. L. Ferguson, Atty. (See Machinery Wanted.)

## ELECTRIC PLANTS

Ark., Ashdown.—Ashdown Light & Power Co. will install electric plant; purchased machinery.

Ark., Mena.—Century Engineering & Construction Co., Geo. B. Thayer, Prest., has franchise to construct electric-light plant; P. O. Benson of Mena, Engr.

Fla., Tallahassee.—City defeated \$9000 bonds to improve and extend electric light, gas and water plants. (Lately noted.)

Ga., Atlanta.—Georgia School of Technology, Phineas V. Stephens, Engr., planning to construct proposed power station; about 160x85 ft., including enclosed cold-storage in rear; reinforced concrete and brick; large amount of structural steel; plant to furnish light, heat, power, compressed air, high-pressure water service and refrigeration for entire school; also serve as hydraulic and experimental power laboratory; install engines, generators, motors, pumps, boilers, switchboard, etc., under flexible conditions as possible so that great variety of tests may be made on the machinery; total cost about \$200,000; install additional laboratory equipment as rapidly as can be secured; building plans and specifications probably ready in six weeks.

Ga., Fitzgerald.—Fitzgerald Water, Light and Bond Com. plans to install 500 H. P. automatic 4-valve engine for direct connection to alternating-current generator, 150 R. P. M.; 375 K. V. A. 60-cycle 220-volt generator; 18 K. W. 125-volt exciter; marble switchboard; open feed-water heater; boiler-feed pump and accessories; machinery purchased; W. A. Green, Supt.

Ga., Gainesville.—Southern Ry., B. Herman, Ch. Engr., Washington, D. C., let contract Porter & Boyd, Charlotte, N. C., to construct transformer-houses at Gainesville and Howell, Ga., in connection with installation of automatic electric block signals between Gainesville and Atlanta and Austell.

Ga., Howell.—Southern Ry., B. Herman, Ch. Engr., Washington, D. C., let contract Porter & Boyd, Charlotte, N. C., to construct transformer-house. (See Ga., Gainesville.)

Ga., Reynolds.—City engaged J. B. McCrary Co., Atlanta, Ga., to survey and prepare plans for electric-light plant; G. L. Cooper, Clerk.

Ga., Rockmart.—City votes Aug. 6 on \$5000 bonds to enlarge electric-light plant; R. R. Beasley, Mayor.

Ga., Valdosta.—City (lately noted considering construction of electric-light system, with \$10,000 available) will probably install one or two 75 K. W. direct-connected units and 25 mi. wire, etc., for 500 incandescent or 100 arc lamps; D. S. Quarterman, Supt. Water-works, to be addressed. (See Machinery Wanted.)

Mo., Easton.—City, Jas. B. Clark, Clerk, sold \$30,000 bonds to install electric-light plant. (Lately noted as asking bids until July 8 to install complete plant.)

Mo., Easton.—City let contract Wilson-Maltman Electric Co., 30 S. Charles St., to construct municipal electric plant; includes building, boilers, engines, generators, pole lines, etc.; cost about \$30,000; all wires in business district to be under ground. (Lately noted inviting bids.)

Mo., Cabool.—Fred Bauch has franchise to establish ice and electric-light plants.

Mo., Cabool.—City is reported to have voted bonds to install electric-light plant. Address The Mayor.

Mo., Hamilton.—City is reported as having granted franchise to C. A. Martin and T. D. Parr to operate electric-light plant.

Mo., Jefferson City.—Water, Gas & Electric Light Co., S. W. Henderson, V.-P., applied to Public Service Com. for authority to issue \$52,000 bonds for general improvements.

Mo., Newburg.—Newburg Light & Power Co. (lately noted incptd., capital \$4000) organized; R. D. Pinto, Prest.; W. F. Houk, Secy.; cost of plant \$2500; uses steam engine; will soon want new engine and generator. (See Machinery Wanted.)

Mo., New London.—North Missouri Light & Power Co. has franchise to construct electric-light plant; use electricity from hydro-electric development on Mississippi River at Keokuk, Iowa.

Mo., Oak Grove.—City Council granted franchise W. H. George to establish electric-

contract L. C. Powers, Knoxville, Tenn., to construct transformer-house in connection with installation of automatic electric block signals between Morristown and Knoxville.

Tex., Cisco.—Cisco Gas & Electric Co., capital stock \$50,000, incptd. by W. S. Michael, W. H. Tobbs and G. G. Ward.

Tex., Houston.—Texas Southern Electric Power Co. incptd. by Edwin B. Parker, Raymond Neilson and C. L. Carter.

Tex., San Benito.—City granted franchise S. A. Robertson as trustee to furnish lights, water and telephone service; will make improvements.

W. Va., Hutchinson.—Monongahela Valley Traction Co., Fairmont, is reported to erect gas-engine plant at Hutchinson and abandon power plant at Fairmont, substituting gas for steam power.

W. Va., Logan.—Logan Lighting Co. has plans by E. R. Weller, Hibbs Bldg., Washington, D. C., for power station; 1 story and basement; 95x170 ft.; 55 ft. high; brick and steel.

W. Va., Woodsdale, P. O. at Wheeling.—Town Council granted franchise Wheeling Valley Light & Power Co., Wheeling, to construct electric-light system.

## FERTILIZER FACTORIES

Ala., Sylacauga.—E. J. Smith & Son will establish mixing plant; estimated cost \$15,000.

Ga., Augusta.—Swift & Co. (main office, Chicago, Ill.) plans to construct fertilizer factory and cottonseed-oil mill with 6 oil presses having annual capacity to crush 18,000 tons seed; also erect cottonseed storage building; use electric power; install 500 H. P. generator; total cost \$300,000. (Previously noted.)

Tex., Houston.—Armour Fertilizer Works (main office, Chicago, Ill.) will erect 8 buildings 2 to 4 stories high, on 6-acre site

others; 8-acre site on Louisville & Nashville Ry.; will construct 254x120-ft. main building, arranged for 16 pipe floors in units of 8, with full complement of fittings floors; building arranged for future extensions without changing form of roof; cupola of 72 in. circumference, inside measurement; for power use electricity from transmission system (hydro-electric development at Lock 12 on Coosa River) of Alabama Power Co., Birmingham. (Robt. Campbell previously reported interested, etc.)

Fla., Ocala.—Iron Works.—Ocala Iron Works will erect building of concrete and brick; 60x200 ft.; cost \$10,000; let contract to Melver & McKay, Ocala; equip as machine shop and to mfr. phosphate machinery; replace burned plant; equipment supplied. (Lately noted.)

Ky., Middlesborough.—Electrical Machinery.—Middlesborough Electric Works (H. J. Herron interested) leased building owned by Utility Power Co. and will operate plant for electrical repair work; machinery (mainly purchased) cost \$5000; H. J. Herron and W. D. Householder lately noted as leasing building, etc. (See Machinery Wanted.)

La., New Orleans.—Lighting Plants.—Claveries Mfg. Co., A. J. Claveries, Prest., leased building at 512 Camp St. and will equip to mfr. lighting plants for plantations and other property outside lighting areas of cities.

N. C., North Wilkesboro.—Milling Machinery, etc.—New Williams Mill Co., capital \$120,000, incptd. by E. V. Williams, C. Call and J. E. Finley.

Mo., St. Louis.—Shoe Machinery.—Simplex Shoe Machinery Co., capital stock \$150,000, incptd. by W. G. Battle, C. E. Clark, T. W. Fuqua and others.

Mo., St. Louis.—Brass Castings.—Carter Carbuiretor Co. purchased factory building at 2849-2844 N. Spring Ave.; site 90x250 ft., partly occupied by 3-story building; unoccupied portion of lot to be improved with building to be equipped for manufacturing brass castings; machinery supplied.

Tenn., Johnson City.—Gasoline Engines.—Chas. Cox, New London, Conn., and Francis J. LaPointe of Boston, Mass., are reported as contemplating establishment of gasoline-engine plant.

Va., Bristol.—Repairs and Manufacturing.—Bristol Machine and Locomotive Works, C. H. Rhodes, V.-P. and Gen. Mgr., will erect 34x48-ft. ordinary-construction building; proposals opened July 11; install machinery; previously noted incptd., capital stock \$25,000, and an acquiring plant of Bristol Machine Works. (See Machinery Wanted.)

Va., Richmond.—Electric Motors.—J. B. Price, Mgr. Richmond Electric Works, promoting organization company with \$200,000 capital to rebuild Richmond Electric Works burned at estimated loss of \$75,000.

## GAS AND OIL ENTERPRISES

Fla., Tallahassee.—City defeated \$9000 bonds to improve and extend gas, electric-light and water plants. (Lately noted.)

Ky., Richardson.—Nats Creek Oil & Gas Co., capital \$10,000, incptd. by A. Preston, R. D. Hinkle and R. D. Hinkle, Jr.

Ky., Scottsville.—Advance Oil Co. (lately noted incptd. with \$25,000 capital) organized with W. Mayfield Gen. Mgr.; now drilling for oil; plans to install pumping equipment, etc. (See Machinery Wanted.)

Okla., Bartlesville.—Cigars.—Cherokee Cigar Co., capital stock \$25,000, incptd. by R. S. Bradley, G. R. McKinley and J. C. Hartman.

Okla., Bartlesville.—New York-Oklahoma Oil Co., capitalization \$1,200,000, organized to acquire Keeler-Morton properties near Bartlesville; 3000 acres, 50 producing oil wells, 15 producing gas wells, etc.; Asa D. Morton, Prest. and Gen. Mgr., Bartlesville; Fredk. H. Minard, V.-P. and Engr., New York; H. N. Baruch, Treas.; Douglas Beardsley, Secy., both of New York.

Okla., Bristow.—Oil Refinery.—C. D. Webster Oil Co. organized; C. D. Webster, Prest.; A. H. Stone, V.-P.; will build oil refinery reported to have daily capacity 100,000 bbls.; erect concrete and brick buildings and tanks; constructing pipe line.

Okla., Claremore.—Lee-Webb Oil Co., capital stock \$50,000, incptd. by F. E. Webb of Claremore, S. D. Felt of Wagoner and J. W. LaPorte of Fairview.

Okla., Chickasha.—Security Drilling Co., capital stock \$100,000, incptd. by C. E. Platt, J. C. Ambrister, Adrian Melton and others.

Okla., Gotebo.—Oil Refinery.—Gotebo Refining Co. (A. F. Vanderwalt, M. F. Pierce and others) will build refinery with daily capacity 300 bbls. oil. (Lately noted incptd. with \$10,000 capital stock.)

## PROPOSAL ADVERTISEMENTS

IN THIS ISSUE

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light and ice plants; franchise to be submitted to popular vote before becoming effective.

Mo., Palmyra.—City voted \$32,000 bonds to improve light and water plants. Address The Mayor. (Lately noted.)

Mo., St. Joseph.—City Council is considering plans to enlarge and improve electric-light plant; W. E. Gorton, Supt.

Mo., St. Louis.—Union Electric Light & Power Co., Shubert Theater Bldg., is reported as contemplating expending \$250,000 for improvements; company's engineers prepared tentative plans for improving property at 9th and St. Charles Sts., upon which substation is located; if general offices are located on site, reported will expend about \$1,000,000 to erect office building.

N. C., Wilmington.—W. B. Cooper's Compress & Warehouse Co. will install electric plant of about 50 to 75 lights. (See Machinery Wanted.)

Okla., Billings.—City voted \$7000 bonds to construct electric-light plant. Address The Mayor.

Okla., Fairland.—Fairland Light & Power Co., L. D. Long, Mgr., will install 60 H. P. boiler and 50 H. P. engine (purchased); also plans to install 30 K. W. generator and exciter. (See Machinery Wanted.)

Okla., Mangum.—City votes Aug. 4 on \$100,000 bonds to build electric-light plant. Address The Mayor. (Lately noted.)

S. C., Walhalla.—City, W. M. Brown, Mayor, voted lately-noted \$6000 bonds; will install electric equipment; obtain electricity from Walhalla Light & Power Co.; Wade C. Hughes, one of Commrs. Public Works. (See Machinery Wanted.)

S. C., Walhalla.—City voted \$6000 bonds to build and operate electric-light plant and ratified contract made by municipal authorities with Walhalla Light & Power Co.; W. M. Brown, Mayor. (Lately noted.)

Tenn., Morristown.—Southern Ry. Co., B. Herman, Ch. Engr., Washington, D. C., let

in Magnolia Park; equip to mfr. chemical fertilizer from phosphate rock, sulphuric acid, etc.; largest building 125x320 ft., 4 stories, equipped with crushing and mixing machinery, besides having storage space for 7500 tons acid phosphate; phosphate unloaded at wharf and delivered to storage rooms by electric conveyors; another building, 80x160 ft., equipped with electrically-operated sulphur roasters and other machinery to mfr. sulphuric acid, crude sulphur being used; also erect 300-ft. wharf (depth of water, 25 ft.), office building, etc.; use 600,000 ft. lumber; construction by company's force; purchased machinery, lumber, etc.; annual capacity, 30,000 tons fertilizer; estimated cost plant, \$150,000. (Lately noted.)

## FLOUR, FEED AND MEAL MILLS

Mo., Oak Ridge.—Oak Leaf Mfg. Co. (lately noted incptd., capital \$10,000) organized; W. Miller, Prest.; J. R. Bowman, V.-P.; J. W. Kinder, Secy., Treas. and Mgr.; mfr. flour, feed, meal and chops.

Okla., Woodward.—Woodward Cotton Co., lately noted to build flour mills, states will make no changes or improvements during 1914.

S. C., Spartanburg.—Spartan Grain & Mill Co., capital stock \$20,000, incptd. by W. D. Burnett, C. B. Fretwell and I. A. Phifer.

Tenn., Abingdon.—Durham Bros., Worley James, local manager, purchased old stone mill on Wolfe Creek; will install overshot water-wheel, etc., and make other improvements; machinery contracted.

Tex., McKinney.—Collin County Mill & Elevator Co. increased capital stock from \$100,000 to \$200,000.

Va., Clarksville.—E. F. Kirby is erecting mill for Clarksville Mill Co. (Lately noted.)

## FOUNDRY AND MACHINE PLANTS

Ala., Gadsden.—Iron Soil Pipe.—Dixie Pipe Co. will be organized by Robt. Campbell and

Okla., Mannsville.—Idal Keel Oil Co., capital stock \$5000, inceptd. by F. B. Storbaugh, E. F. Jones, L. Z. Baker and others.

Okla., Madill.—Kinlock Oil & Gas Co., capital stock \$10,000, inceptd. by J. A. Cotner, R. L. Russell and H. L. Sturm.

Okla., McAlester.—Francie Oil Co., Kiowa, Okla., organized; H. G. Rowley, Prest., Stuart, Okla.; C. O. Doss, V.-P., McAlester; C. B. Hendrix, Secy.; R. D. Renfro, Treas., latter two of Kiowa; organized to drill for oil and gas in Healdton field. (Lately noted inceptd., \$12,000 capital.)

Okla., Nowata.—Cole Oil & Gas Co., capital stock \$12,000, inceptd. by Lloyd Cole of Nowata and John Cole of Prairie Grove, Ark.

Okla., Newkirk.—Tex-O Oil & Gas Co., capital stock \$50,000, inceptd. by R. J. Thomas and W. S. Giles of Newkirk and E. L. Kimbrough of Greenville, Tex.

Okla., Oklahoma City.—Obrecht Oil & Gas Co., capital stock \$15,000, inceptd. by J. C. Miller of Union, F. Broadwell and J. B. Pittman of Fairfield, Ill.

Okla., Oklahoma City.—Mammoth Oil & Gas Co., capital stock \$10,000, inceptd. by F. A. Colwell and C. E. Murphy, both of Oklahoma City, and A. E. Romberg of Shawnee.

Okla., Tulsa.—Adney Oil & Gas Co., capital stock \$5000, inceptd. by Wm. Blake of Tulsa, A. P. Crawford of Sapulpa and M. B. Burke of Denver, Col.

Okla., Tulsa.—Oil Refinery, etc.—Cosden Refining Co., capital stock \$10,000,000, completed organization; acquires property of J. S. Cosden & Co., including refineries at West Tulsa, Cushing and Big Heart, interest in 17,000 bbls. oil production, 8000 acres leases, 34 mi. pipe line, etc.; will lay pipe line from Cushing to West Tulsa; add factory for lubricants, paraffine, etc.; West Tulsa plant; latter has daily capacity 7500 bbls.; J. S. Cosden, Gen. Mgr.; company financed by Raymond, Pynchon & Co., New York, London and Paris. (Previously reported chartered, etc.)

Tex., Athens.—A. H. Easterling, John W. Murchison, H. T. Gilliam and others organized company with \$5000 capital stock to develop oil wells; secured leases. (Athens Oil & Gas Co. lately noted organized to drill for oil.)

Tex., Beaumont.—Hornsbly Oil Co., capital stock \$15,000, inceptd. by A. B. Kelly, W. D. Gordon and R. L. Young.

Tex., Cisco.—Gas Plant.—Cisco Gas & Electric Co., capital stock \$50,000, inceptd. by W. S. Michael, W. H. Tobbs and G. G. Ward.

Tex., Kennard.—Kennard Oil & Mfg. Co., capital stock \$15,700, inceptd. by C. A. Westerman, W. H. Spinks and J. C. West.

Tex., Paint Rock.—Schultz Oil Co., capital stock \$16,000, inceptd. by W. O. Schultz, D. F. Savage and James Meers.

Tex., Sour Lake.—Bell Oil Co., capital stock \$15,000, inceptd. by W. D. Gordon, E. Cockrell and A. L. Lyon.

Tex., Waco.—Texas Pipe Line & Gas Co. (lately noted) increased capital stock to \$250,000; has 15 mi. 4-in. pipe line; opens bids Aug. 1 on 35 mi. 6-in. steel pipe; Engr., J. J. Potts, Waco. (See Machinery Wanted.)

Tex., Wichita Falls.—Hot Sands Oil Co., capital stock \$12,000, inceptd. by J. D. Avis, T. B. Smith and F. P. Avis.

W. Va., Charleston.—Salome Oil Co., capital \$10,000, inceptd. by E. B. Snyder, R. L. Bird, G. D. Dillon and others.

### ICE AND COLD-STORAGE PLANTS

Ark., Blytheville.—Blytheville Ice Co. will rebuild ice plant, doubling present daily capacity of 21 tons.

Ark., Hot Springs.—Company being organized to acquire Chalbeate Spring on property of H. M. Westcott and utilize water to mfr. ice; spring has flow 200,000 gals. water per 24 hrs.

Fla., Bartow.—Crystal Ice Works Co., J. D. Clark, Prop., will install 25-ton ice plant (except boiler) with additional 10 tons refrigerating capacity; opens bids Sept. 1; no building. (See Machinery Wanted.)

Fla., South Jacksonville.—South Jacksonville Utilities Co., capital \$50,000, inceptd.; E. L. Gunn, Prest., South Jacksonville; C. M. Bingham, V.-P., Daytona; W. F. Reid, Secy.; Harry Botts, Treas.; both of South Jacksonville.

Md., Baltimore.—Knickerbocker Ice Co. inceptd.; George Miller, Prest., Charles St. and Mt. Royal Ave.; purchased Hammond plate ice plant at York and William Sts.; 200-ton steam-driven plant; considering remodeling and installation of electric power; will consider single or double compressors, condensers, cumulator, etc. (See Machinery Wanted.)

Miss., Biloxi.—A. Kornmann, Jr., is promoting organization of People's Ice Co. to build 50-ton ice plant.

Miss., West.—Company (Dr. L. S. Rogers, Prest. West Bank & Trust Co., interested) will install 5-ton ice plant. (See Miscellaneous Factories and Machinery Wanted.)

Mo., Cabool.—Fred Bauch has franchise to establish ice and electric plants.

Mo., Oak Grove.—City Council granted franchise W. H. George to establish ice and electric-light plants; franchise to be submitted to popular vote before becoming effective.

Mo., Salisbury.—Albert Emmerich and Jos. Breitenbach contemplate building ice plant.

N. C., Charlotte.—Managers Stonewall Hotel will expend about \$20,000 in improvements to include installation of refrigerating machinery.

N. C., High Point.—Polar Bear Ice Co., capital \$50,000, organized by Sam B. Coffin to build 60-ton ice plant; will equip plant to mfr. ice-cream; use gas producer; also deal in fuel. (See Miscellaneous Factories.)

Okla., Pauls Valley.—Washita Electric Power Co., R. K. Johnston, Secy.-Treas., is reported as contemplating erection of ice plant.

Va., Goeburn.—Goeburn Bottling Co., T. B. Hillman, owner, will erect plant to mfr. ice, etc.; daily capacity 5 tons ice. (See Miscellaneous Factories and Machinery Wanted.)

W. Va., Blacksburg.—E. A. Park will build 10-ton ice plant; let contract for machinery.

### IRRIGATION SYSTEMS

S. C., Goodrich.—Mixon Seed Co., Charleston, S. C., will install irrigation system; McCrady Bros. & Cheves, Charleston, Engrs. (See Land Developments.)

Tex., Blessing.—Farmers' Canal Co., C. W. White, Mgr., will not construct additional canal; recently applied (under new State law) for right to operate canal built some years ago. (Lately noted.)

### IRON AND STEEL PLANTS

Ala., Ironaton.—Iron Furnace.—Alabama Consolidated Coal & Iron Co., Birmingham, Ala., is reported to reline furnace, expending \$15,000.

W. Va., Wheeling.—Iron Furnaces, Steel Plant, etc.—Wheeling Steel & Iron Co.'s \$2,500,000 capital increase is \$1,200,000 for purchasing properties and \$1,300,000 for improvements and betterments; report states probably dismantle Top Mill furnace and build another furnace at Benwood costing \$350,000 to \$400,000, construct bar mill costing \$200,000, double present capacity of Wheeling Sheet & Tin Plate Co.'s mill at Yorkville, O., etc. (Lately noted increasing capital from \$5,000,000 to \$7,500,000 to buy Yorkville plant, etc.)

### LAND DEVELOPMENTS

Ala., Tuscaloosa.—R. P. Prowell purchased 30 acres in Gulf Woods and will improve as residential section; build country club and golf links.

Ala., Mobile.—St. Louis-Alabama Land Co., Room 4, People's Bank Bldg. (lately noted inceptd., capital stock \$30,000), organized; O. B. Bottorff, Prest.; G. R. Ellison, V.-P.; C. W. Dodson, Secy.-Treas.; develop 1040 acres near Mobile; satsuma-orange, pecan, truck and general farming; according to present plans, all improvements made by purchasers.

Fla., Clearwater.—City votes Oct. 6 on \$5000 bonds to purchase and improve parks; J. R. Jeffords, Mayor. (See Road and Street Work.)

Miss., Greenwood.—Tennessee Land Co., capital \$60,000, inceptd. by G. H. Miller, F. L. Miller and others.

Miss., Jackson.—Mississippi Land & Cattle Co., capital \$10,000, inceptd. by E. E. Roland, V. T. Davis and others.

Mo., St. Louis.—Dawson County Farms Co., capital stock \$50,000, inceptd. by Sam B. McPheeters, Thos. L. Anderson and Jas. A. Seddon.

S. C., Friendfield, P. O. at Florence.—Florence Land Co., capital stock \$16,000, inceptd.; John H. Lambert, Prest.; Friend Hoar, V.-P. and Secy.; Henry M. Earle, Treas.

Okla., Sapulpa.—City voted bonds for park extension. Address The Mayor.

S. C., Goodrich.—Mixon Seed Co., Charleston, S. C., developing 30 acres as demonstration seed farm; acreage cleared and stumps blasted; will install irrigation system; let contract to McCrady Bros. & Cheves, Charleston, for about 2½ mi. pipe drains; McCrady Bros. & Cheves, Engrs.

Tenn., Chattanooga.—Penola Grove Co., capital stock \$5000, inceptd. by W. C. Spencer, G. W. Brown, E. W. Harvey and others.

Va., Norfolk.—Council authorized expenditure of \$40,000 to improve Core tract on condition that portion of land be reserved for parks and streets, etc.; W. T. Brooke, City Engr.

Va., Roanoke.—Virginia Improvement Corp., capital \$100,000, chartered; H. B. Markley, Prest.; R. H. Angell, V.-P.; Arthur L. Sibert, Secy.-Treas.

W. Va., Clarksburg.—Doty & Alexander Development Co., capital \$25,000, inceptd. by Chester C. Doty, Frances M. Doty, Harvey M. Alexander and others.

### LUMBER MANUFACTURING

Ark., Arkadelphia.—Doston Lumber Co. will not erect mill. (Recent statement incorrect.)

Fla., Cottondale.—Cottondale Lumber Co. (lately noted inceptd., capital stock \$20,000) organized; J. R. Shomaker, Sr., Prest.; Arthur Williams, V.-P.; I. L. Schuyler, Secy.-Treas.; at present will export lumber and hardwoods from South Atlantic and Gulf ports; interested in mill machinery and electrical equipments. (See Machinery Wanted.)

Ky., Frankfort.—Kenney Bros. will rebuild mill reported burned at loss of \$30,000.

Ky., Louisville.—Jones Lumber Co., capital \$1000, inceptd. by Fred G. Jones, Chester W. Brickley and William W. Jett.

La., Oak Grove.—Frank James will establish lumber yard and install planing mill; L. Grathwell in charge.

Miss., Hattiesburg.—Conn Bros. are reported to have purchased section of pine timber in Forrest county for \$35,000 and will build plant.

S. C., Charleston.—Flint River Cypress Timber Co., capital stock \$300,000, inceptd. by E. H. Jennings and C. J. Baker.

Tenn., Memphis.—East End Lumber Co., capital \$10,000, inceptd. by J. E. Carthel, B. L. Capell, W. W. Swift and others.

Tex., Conroe.—Delta Land & Timber Co. (subsidiary to Central Coal & Coke Co.), I. H. Petty, V.-P., Kansas City, Mo., preparing plans for plant; construct double-band mill; buildings of steel and concrete construction; kiln-dry all products; handle lumber by overhead trolley system; after grading at kilns will sort lumber into packages and stack in rough shed holding 10,000,000 ft.; build 15 mi. tram railway connecting plant and timber land; has 90,000 acres in Montgomery and Walker counties; this is plant company originally proposed locating at Houston; let contract L. Moore Drykiln Co., Jacksonville, Fla., for 12 kilns, 20x120 ft., buildings to be of concrete construction and kilns built under contractor's system with improved steel foundation. (Lately noted.)

Tex., Glazier.—Glazier Lumber Co., capital stock \$8000, inceptd. by J. F. Johnson, W. D. Fisher and W. C. Isaacs.

Tex., Houston.—J. B. Farthing Lumber Co. purchased Montrose Lumber Co.'s lumber yard; will continue lumber business at Congress Ave. and Crawford St., where main offices are located; install additional machinery in Montrose Yard.

### MINING

Mo., Galena.—Lead and Zinc.—T. B. Carpenter leased 10 acres mining land; proposes to sublease to two other operators and develop.

S. C., Williamston.—Stone.—Carolina Stone Co. will meet July 31 to consider increasing capital stock from \$25,000 to \$100,000.

Tenn., Neubert.—Marble.—Tennessee Marble Corp., capital \$500,000, inceptd. to develop marble deposits on 70-acre tract near Neubert's Springs; W. P. Hofferbert, Prest.; R. F. Young, V.-P. and Gen. Mgr.

### MISCELLANEOUS CONSTRUCTION

Ark., Little Rock.—Heating.—Central Heating & Mfg. Co. contemplates extending and changing heating system from hot water to steam; total expenditure estimated at \$35,000; expenditure this year to be \$52,359.

Ark., Magnolia.—Levees, etc.—Columbia county will construct 3 levees and 7 bridges across Big Creek between Magnolia and Waldo; across Cornie Creek between Magnolia and Village, and across Horsehead Creek and Magnolia-Minden Rd.; W. A. Kelley, County Judge, invites bids.

Fla., Clearwater.—Pier.—City votes Oct. 6 on \$8000 bonds to build pier in addition to \$5000 now available; J. R. Jeffords, Mayor. (See Road and Street Work.)

Fla., New Smyrna.—Channel.—City Council authorized appropriation to dredge channel in river in front of city; channel to be bulkheaded and made available to uses of boats. Address The Mayor.

Ga., Macon.—Docks.—City contemplates construction of docks on river front; cost \$25,000; previously noted. Address The Mayor. (See Miscellaneous Enterprises, Macon-Atlantic Navigation Co.)

La., Baton Rouge.—Levee.—Board of State Engrs., 213 New Orleans Court Bldg., New Orleans, ask bids until July 28 for levee construction—raising and enlarging—Mississippi River, right bank; Donna Vista levee, about 30,000 cu. yds.; Longwood, about 175,000 cu. yds.; Mascot, about 170,000 cu. yds.; Frank M. Kerr, Ch. State Engr. (See Machinery Wanted.)

La., Mandeville.—Pier.—St. Tammany-New Orleans Ry. & Ferry Co. will rebuild 150 to 200 ft. of pier reported burned at loss of \$8000 to \$10,000.

La., Tallulah.—Levee.—Board of Commrs., Fifth Louisiana Levee Dist., O. W. Campbell, Secy., will construct levee, Mississippi River, right bank; bids until July 28 by Board of State Engrs., 213 New Orleans Court Bldg., New Orleans; Milliken Bend levee, 125,000 cu. yds.; Cabin Teale levee, 75,000 cu. yds.; Duckport levee, 125,000 cu. yds.; Fairview levee, 80,000 cu. yds.; amounts approximate. (See Machinery Wanted.)

Md., Baltimore.—Dredging.—U. S. Engr. Office, Lansing H. Beach, Col., Engrs., 308 Custom-house, Baltimore, receives bids until July 24 to dredge in Broad Creek; information on application. (See Machinery Wanted.)

Md., Baltimore.—Ship Channel.—Canton Co., Commerce and Water Sts., let contract Maryland Dredging & Contracting Co., 1512 Fidelity Bldg., Baltimore, to dredge 35-ft. channel from main channel in lower harbor to concrete pier in lower Canton; pier (previously detailed) under construction, 850x150 ft., with steel superstructure; adjacent to pier is erecting 200x80-ft. 6-story concrete construction fireproof warehouse, previously detailed; foregoing improvements estimated to cost \$500,000; future plans contemplate additional piers and warehouses to meet trade demands.

Tex., Brenham.—Levee.—Washington County Improvement Dist. No. 1 let contract C. Nordstrom to repair Brazos River levee; protect 8000 acres; cost \$12,000.

Tex., Port Aransas.—Dredging.—Government will dredge at Port Aransas; bids at U. S. Engr. Office, Galveston, until Aug. 12; C. S. Riche, Lieut.-Col., Engrs. (See Machinery Wanted.)

Va., Norfolk.—Inland Waterway.—Government let contract to Bowers Southern Dredging Co., Galveston, Tex., for 1,700,000 cu. yds. dredging at 59 cents, or \$100,300; this is to enlarge and deepen that portion of Norfolk to Beaufort (N. C.) inland waterway between Reacons 3 and 5 in Lower North Landing River, Va. and N. C.; Lieut.-Col. E. Eveleth Winslow, U. S. Engr. (Call for bids lately noted.)

W. Va., Huntington.—Undergrade Crossing.—City contemplates voting on \$20,000 bonds to pay city's share of cost of 10th St. undergrade crossing. Address City Commrs.

### MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Laundry.—Excelsior Laundry Co. contemplates rebuilding plant reported burned at estimated loss of \$15,000.

Ala., Birmingham.—Crematory.—City Commissioners appropriated \$5000 to build crematory in West End; Julian Kendrick, City Engr.

Ala., Decatur.—Laundry.—Quality Laundry Co. will improve plant and install machinery.

Ark., Eureka Springs.—Stock.—Grassy Knob Stock Co., capital \$1500, inceptd.; C. A. Reed, Prest.; Wm. A. Jenkins, Secy.

Ala., Mobile.—Grain Elevator.—Mobile & Ohio R. R., B. A. Wood, Ch. Engr., is reported as contemplating expenditure of \$16,000 to rehabilitate grain elevator at Pier No. 5.

Ark., Pine Bluff.—Laundry.—Troy Laundry Co., capital stock \$10,000, inceptd.; Edward G. Williams, Prest.; Jas. Jordan, Jr., Secy.-Treas.

D. C., Washington.—Mineral Water.—Castalia Springs Corp., 700 11th St. N. W., incorporated by Nelson Wilson, Frank E. Plummer and G. A. Street.

Fla., Jacksonville.—Contracting.—Jacksonville Contracting Co., capital \$5000, inceptd.; R. J. Galespie, Prest.; D. S. Shine, Jr., Secy.-Treas.

Ga., Macon.—Water Transportation.—Macon-Atlantic Navigation Co., previously



noted inctd., \$50,000 capital stock, to operate steel barges on Ocmulgee River, proposes to build self-propelled steel barges to navigate between Macon and Brunswick; plans for construction of initial barge to be submitted within few days; A. J. Long, Pres.; T. D. Tinsley, V.-P.; L. P. Hillyer, Treas.; B. Gilham, Secy. (In this connection city contemplates constructing docks. See Miscellaneous Construction.)

Mo., Baltimore—Taxicabs.—Taxicab Co., 1123-1129 Cathedral St., proposes issuing \$30,000 bonds for extensions, retiring preferred stock and paying outstanding obligations.

Mo., St. Joseph—Contracting.—Union Paving & Construction Co., capital stock \$100, inctd. by J. R. Rackliffe, S. E. Reynolds and Thos. T. Rackliffe.

Mo., St. Louis—Plumbing.—C. O. Smith Plumbing Co., capital \$5000, inctd. by Chas. O. Smith, Edward J. Hanley and Seneca C. Taylor.

Miss., Laurel—Publishing.—Leader Publishing Co., capital \$10,000, inctd. by Stone Deavours, Edgar G. Harris and Chas. R. Shannon.

Mo., Kansas City—Grain Elevator.—Kansas-Missouri Elevator Co. (subsidiary to Missouri Pacific-Iron Mountain R. R.) constructing 40 additional concrete storage bins, 84 ft. deep by 22 ft. diameter, each with capacity 25,000 bu. grain, total 1,000,000 bu., and 19 smaller bins, each with capacity 7000 bu., or 133,000 bu. total; latter of interstice type, occupying space formerly vacant between circular bins of this style elevator; will have total 69 units storage space, capacity 2,133,000 bu., more than double present capacity; present elevator consists of 10 concrete circular storage tanks with capacity 80,000 bu. each, 800,000 bu. total, and elevator building proper with capacity 200,000 bu., total 1,000,000 bu. (Missouri Pacific Ry., J. R. Stephens, Ch. Engr., St. Louis, lately noted having let contract Stephens Engineering Co., Monadnock Bldg., Chicago, to erect 1,000,000 bu. addition.)

Mo., St. Louis—Grain Elevator.—St. Louis Grain Club, Marshall Hall, Prest., is reported to erect grain elevator with capacity 1,000,000 bu. and cost \$350,000.

S. C., Georgetown—Laundry.—Georgetown Steam Laundry, capital \$3000, inctd. by W. F. Shackelford, J. R. Garrison and J. H. Wallace.

Tenn., Memphis—Grain Elevator.—Taylor Grain Co. will rebuild grain elevator reported burned at estimated loss of \$25,000.

Tex., Beaumont—Paving Contracting.—Evaude Rock Asphalt Co. increased capital stock from \$150,000 to \$200,000.

Va., Culpeper—Printing and Indexes.—Coens Index Co., capital stock \$1500, inctd.; Warren E. Coens, Prest., Culpeper; H. F. Robertson, Secy., Bristol.

Va., Roanoke—Laundry.—Crystal Spring Laundry Co. will erect 1-story brick laundry; cost \$7000.

W. Va., Buckhannon—Publishing.—Upshur Record Publishing Co., capital \$5000, inctd. by C. P. Darlington, C. E. White, Wm. Post and others.

### MISCELLANEOUS FACTORIES

Ala., Bessemer—Tar Products.—American Tar Products Co., 208 S. LaSalle St., Chicago, Ill., is reported as having let contract to H. Koppers Co., Chicago, for construction \$100,000 plant to mfr. tar products from tar output of Woodward Iron Co.'s coke ovens.

Ala., Mobile—Syrup and Bottling.—Mocola Co., T. F. Murphy, Prest., will manufacture syrup for carbonated drinks and operate bottling plant. (Lately noted incorporated, capital stock \$100,000.)

Fla., Arcadia—Medicine.—Cassell Medicine Co., capital stock \$10,000, inctd.; J. A. Hendry, Prest.; T. A. Cassal, V.-P.; J. G. King, Secy.-Treas.; has plant having daily capacity 500 bottles; plans increasing output.

Fla., Starke—Cigars.—Starke Cigar Co., Geo. L. Massey, Prop., will erect lately-noted building; 2½ stories, 25x60 ft.; cost \$1000; frame; let contract R. S. Fernandez; daily capacity of plant about 10,000 cigars, beginning Oct. 1.

Fla., St. Petersburg—Cigars.—C. H. C. Co., Punta Gorda, Fla., will establish cigar factory; location, 1st Ave. South and 5th St.

Ky., Greenville—Tobacco.—S. E. Rice Tobacco Co., lately noted to rebuild tobacco factory, will erect 100x60-ft. 3-story building of concrete and iron sheeting construction; open building proposals in fall; install machinery.

Ky., Glasgow—Bakery.—Sanitary Bakery Co., capital \$4000, inctd. by W. G. Hughes, Jr., H. B. Trigg and J. R. White.

Md., Baltimore—Bakery.—City Baking Co.,

500 Equitable Bldg., will erect additional story and remodel branch plant at 106-110 W. Barre St.; fireproof and ordinary construction; opens bids July 18; John Freund, Archt., 11 E. Pleasant St.

Ky., Pikeville—Dairy Products.—J. B. Polley is reported to establish dairy.

La., Bogalusa—Sweeping Compounds, etc. Cedarite Chemical Works has begun mfr. of sweeping compounds, disinfectants, etc., and is interested in prices on cedar oil and sawdust. (See Machinery Wanted.)

Md., Frederick—Brushes.—Ox Fiber Brush Co., J. K. Robinson, Jr., Prest., 1120 Marbridge Bldg., New York, will, on July 17, consider increasing capital stock from \$300,000 to \$1,000,000.

Md., Jessups—Creamery.—Jacob Meyer, Bernard Maenner and others promoting organization company to establish co-operative creamery.

Mo., Alma—Creamery.—Alma Creamery Assn., capital \$4400, organized by W. F. Rolf, R. H. Hill and Jos. Schmitt.

Miss., West—Creamery.—Company (Dr. L. Rogers, Prest., West Bank & Trust Co., interested) organized to establish creamery; capacity 1000 to 1500 cows; in connection, install 5-ton ice plant. (See Machinery Wanted.)

Mo., Kansas City—Chemicals.—Page-Love Chemical Co., capital stock \$10,000, inctd. by Geo. S. Page, J. B. Love and S. C. Nelson.

Mo., St. Louis—Churns.—Dazey Churn Co. will erect addition to plant at 4305 Warne St.; cost \$5000; contractors, F. Menke.

Mo., St. Louis—Cloaks and Suits.—Greenberg & Friedman Cloak & Suit Co., capital stock \$20,000, inctd. by Isidor Greenberg, Harry J. Friedman and David Greenberg.

Mo., St. Louis—Callophones.—Missouri Callophone Co., capital stock \$75,000, inctd. by Kurt A. Krause, C. C. Shafer, Jas. N. Hull, Jr., and others.

Mo., St. Louis—Plumbing Supplies, etc.—Jossam Mfg. Co., capital stock \$2000, inctd. by Sam W. Goldman, Jos. Hirschsteln, Meyer J. Lippe and Augusta Hirschsteln.

Mo., St. Louis—Macaroni.—American Macaroni Co., 1008 N. 2d St., organized; Ward Goodlow, 616 Granite Bldg., Prest.-Treas.; Jos. Freschi, V.-P. and Mgr.; John Ravarino, Secy.; erect fireproof building next year. (Lately noted inctd., capital stock \$20,000.)

Mo., St. Louis—Pulleys and Stakes.—Pull-U-Out Mfg. Co., 909 Pine St., organized; R. M. Eggleston, Prest.-Mgr.; Ross Houck, V.-P.; F. P. Cornish, Secy.; will not erect building at present; having machines manufactured; later will assemble own machines. (Lately noted inctd., \$100,000 capital stock.)

Mo., St. Louis—Store Fixtures.—M. A. Heilmann Mfg. Co., capital stock \$15,000, inctd. by Wm. F. Krantz, Arthur G. Merz, Sam Frank and others.

N. C., High Point—Ice-cream.—Polar Bear Ice Co. (Samuel B. Coffin interested) contemplates installing equipment to mfr. ice-cream. (See Ice and Cold-storage Plants.)

N. C., Oriental—Pine Tar Oil, etc.—Oriental Pine Oil Works about completed new plant; 35x40 ft.; wood building; machinery includes boilers, pumps, retorts, tanks, piping, valves, etc., costing \$6000; daily product, 150 gals. pine tar oil, etc. (Lately noted to rebuild.)

N. C., Scotland Neck—Peanuts.—N. B. Josey will build peanut factory; main building 4 stories; machinery to be operated by electricity supplied from municipal power plant.

Okla., Bartlesville—Cigars.—Cherokee Cigar Co., capital stock \$25,000, inctd. by R. S. Bradley, G. R. McKinley and J. C. Hartman.

S. C., Greenville—Cotton-mill Supplies.—Norris Bros., capital \$70,000, inctd. by D. L. Norris, A. M. Norris and D. O. McLin.

S. C., Orangeburg—Palmetto Corp., capital \$4000, chartered by Wm. C. Wolfe and Jos. A. Berry.

Va., Richmond—Paint.—Chahokke Paint Co., capital \$40,000, inctd.; Harvey D. Goddin, Prest.; Allan T. Sheppard, Secy.-Treas.

Tenn., Nashville—Safety Guards.—O'Donoghue Safety Guard Gas Stove Attachment Co. increased capital stock from \$10,000 to \$15,000 and changed name to Surety Attachment Co.

Tex., Dallas—Sauces, etc.—Price Mfg. Co., Houston, will establish plant to mfr. sauces, vinegar, extracts, etc.

Va., Coeburn—Bottling, etc.—Coeburn Bottling Co., T. B. Hillman, owner, opens bids Sept. 1 to rebuild plant to bottle soda waters, mfr. ice cream and ice; 30x100 ft.; fireproof; install bottling, refrigerating and ice-cream machinery; daily capacity 400 to 600 doz. bottles soda water, 100 gals. ice

cream and 5 tons ice; lately reported burned. (See Machinery Wanted.)

W. Va., Huntington—Mattresses.—Gladstone Mattress Co. inctd. by I. N. Bullington, Thos. W. Harvey, R. P. Aleshire and others; purchased property formerly owned by Haury Bending Co.; site 256x400 ft.; remodel and equip buildings for mattress factory.

W. Va., Huntington—Caskets.—Everlasting Combined Casket & Vault Co., capital \$30,000, inctd. by G. E. Kesterson, A. R. Hatfield, M. J. Ferguson and others.

W. Va., Huntington—Gas Fixtures, etc.—John T. Wilson will erect brick building; first floor to be occupied by A. F. Thompson Mfg. Co.; front of structure to be 2 stories and rear 1 story.

### MOTORS AND GARAGES

Ala., Birmingham—Garage.—Solon Jacobs will erect garage; 75x150 ft.; cost \$10,000; Archt., Wm. C. Weston; Contr., Carroll-Blake Construction Co.

Ky., Louisville—Garage.—Electrical Garage Co., capital \$25,000, inctd. by George G. Bader, Frank S. Ouerbacker and J. W. Burton; erect brick garage at 1815 S. 3d St.; cost \$6000.

Tex., Brownwood—Garage.—E. G. Hall let contract Hood & Staggs to erect garage; cost \$10,000.

### RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Ala., Birmingham—Southern Ry., B. Herman, Ch. Engr., Washington, D. C., will build coal chute and sand tower, costing \$25,000, at Finley classification yards in North Birmingham. (Lately noted as having let contract to build \$75,000 roundhouse in connection with various improvements, for which \$1,500,000 expenditure was authorized.)

Ala., North Birmingham—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contract to T. S. Moody & Co., Chattanooga, Tenn., to construct wash and locker rooms at Finley yard.

S. C., Ninety-Six—Southern Ry., B. Herman, Chief Engr., 1300 Pennsylvania Ave., Washington, D. C., will erect combination freight and passenger station; 29x137 ft.; white and colored waiting-rooms, freight room, ticket and baggage-rooms.

Tex., Dallas—Union Terminal Co., C. H. Dana, Ch. Engr., let contract to J. W. Thompson, 509 Boatman's Bank Bldg., St. Louis, Mo., to erect union passenger station and terminals; work includes depot, train shed, roundhouse, coach shed, etc.; grading required for tracks approximates 700,000 to 800,000 yds. material; tracklaying interlocking included in contract; Hughes & O'Rourke, Praetorian Bldg., Dallas, has contract for buildings; estimated cost (complete) \$3,000,000; previously noted. (See Railway Stations, Sheds, etc.)

Va., Richmond—Southern Ry., B. Herman, Ch. Engr., Washington, D. C., will build coaling station; 2 stories; reinforced concrete; cost \$40,000; let contract Fairbanks, Morse & Co. of Atlanta, Ga., and other cities. (Company lately noted to enlarge freight yard and shop facilities at Richmond and South Richmond.)

Va., Roanoke—Norfolk & Western Ry. Co., J. E. Crawford, Ch. Engr., will extend engine-erecting shops; main building 191 ft. long, 68 ft. high, with 2-story lean-to 191 ft. long, 28 ft. wide, 48 ft. high; cab shop in upper story of lean-to; to have concrete foundations and floor; building of steel frame, with steel trusses, slate roof, skylight, and brick walls in part; erecting shop to be equipped with 100-ton Niles crane, also 15-ton crane, and engine drop pits; lean-to to have 5-ton crane in cab shop and 10-ton crane in lower portion; approximate cost \$70,000 without cranes; contract let to Virginia Bridge & Iron Co., Roanoke, Va., to furnish steel work; railway force to construct foundations and erect building.

### ROAD AND STREET WORK

Ala., Athens—Limestone county will grade, drain and surface with gravel part of Decatur-Athens Rd., beginning at river; bids until July 27; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Birmingham—City will pave 34th Ave. from 26th to 29th St.; estimated cost, \$10,000; received bids July 14 on asphalt, bitulithic, asphaltic concrete and bituminous concrete; Julian Kendrick, City Engr.

Ala., Birmingham—City let contract to Paul Richter, Birmingham, to grade, macadamize, curb, gutter and pave sidewalks on

Waller St.; cost \$1203; work includes 600 yds. excavation, 500 yds. cement, 150 cu. yds. slag and 150 cu. yds. chert; Julian Kendrick, City Engr.

Ala., Birmingham—City will pave N. 25th St. from 12th to 17th Aves.; cost \$12,000; bids until July 14; Julian Kendrick, City Engr. (See Machinery Wanted.)

Ala., Birmingham—City will pave Maplewood St. from Arlington Ave. to 16th Ave. with asphaltic concrete; cost \$3000; Julian Kendrick, City Engr.

Ala., Gadsden—City will pave Chestnut St. from 10th to 12th St. with asphalt; will let contract Morgan & Co. at \$10,773 to pave Forest Ave. from 10th to 12th St.; Chas. L. Marsh, City Engr.

Ark., Marion—Crittenden County Commrs. have \$350,000 bonds available to construct roads, including road from Marion to Memphis, Tenn.; also build approach to J. T. Harahan bridge.

Fla., Clearwater—City votes Oct. 6 on \$70,000 bonds as follows: \$18,000 pave streets; \$8000 build pier, in addition to \$5000 now available; \$18,000 construct sewers; \$5000 extend water-works; \$5000 construct drainage canal; \$5000 purchase and improve parks; \$11,000 redeem outstanding indebtedness; J. R. Jeffords, Mayor. (Lately noted.)

Fla., Jacksonville—City about to begin paving on 25 streets; let contracts, totaling \$313,500, as follows: Wilson Construction Co., Jacksonville, 17,834 sq. yds. Dolarway, \$37,500, and 7683 sq. yds. vitrified brick on sand base, \$19,500; Atlantic Bitulithic Co., Richmond, Va., 30,202 sq. yds. asphaltic concrete, \$66,000; Young Construction Co., Jacksonville, 22,430 sq. yds. asphaltic concrete, \$57,000; Alabama Paving Co., Birmingham, Ala., 37,154 sq. yds. vitrified brick on concrete base, \$110,500; Georgia Engineering Co., Augusta, Ga., 24,281 sq. yds. vitrified brick on sand base, \$53,000. L. D. Smoot, Commr. Public Works.

Fla., Plant City—City will vote on \$30,000 bonds to pave streets; City Council adopted resolution to make 2 temporary loans of \$5000 each to pave Reynolds and Collins Sts.; pave with brick to width of 20 and 24 ft. Address The Mayor.

Fla., Tallahassee—City voted \$34,000 street and paving bonds. Address The Mayor. (Lately noted.)

Ga., City View, P. O. Columbus—City voted July 9 on \$5300 street-improvement bonds. Address The Mayor.

Ga., Columbus—Columbus Board of Trade in conjunction with Commrs. and other representatives of Muskegee, Chattahoochee and Stewart counties held meeting and planned highway from Columbus to Cumeta, Richland and Lumpkin; 9 mi. road in Muskegee county will be improved; 17½ mi. in Chattahoochee county to be entirely reconstructed; 13½ mi. in Stewart county; J. H. Lane, Muskegee County Engr., to make cost estimate.

Ky., Oakdale, P. O. Louisville—Town contemplates paving 2 n. l. of streets. Address The Mayor. (See Sewer Construction.)

Ky., Vanceburg—Lewis county voted \$150,000 bonds to construct roads. Address County Commissioners.

La., Hammond—City will grave streets. Geo. F. Smith, Commr. of Streets.

Mo., Brunswick—City let contract Young Bros. Construction Co., St. Joseph, to pave Broadway; 23,160 sq. yds. vitrified vertical fiber paving blocks and 11,000 lin. ft. artificial stone curb; plans by Tuttle & Pike, Engrs., Kansas City. (Lately reported to have voted \$12,000 bonds.)

Md., Cumberland—City voted \$150,000 bonds to pave streets. Address The Mayor. (Lately noted.)

Md., Easton—City, Jas. B. Clark, Clerk, sold \$15,000 bonds for street improvement. (Call for bids to pave 20,000 sq. yds. pavement lately noted.)

Md., Rockville—Montgomery county let contract G. B. Mullin Co., 14th and Kennedy Sts. N. W., Washington, to construct 1½ mi. macadam paving; \$12,000 available; M. D. Knight, Rockville, Engr. in charge.

Miss., Pittsboro—Calhoun County Suprvs. have bonds available to construct roads in Beat 1; Beat 5 petitioned Commrs. for bond issue for roads.

Mo., Sedalia—Pettis County Commrs. let contract W. E. Cook to construct 1 mi. rock road south from Smithton.

Mo., Sikeston—City will construct about 3400 sq. yds. concrete paving; bids opened July 13. Benj. L. Parker, City Engr.

Mo., Springfield—City will construct 10,000 sq. yds. concrete paving; invite bids in about 10 days; also construct 15,000 sq. yds.



asphaltic concrete pavement; invite bids in about 60 days. Address The Mayor.

N. C., Graham.—Street Com., Wm. I. Ward, Chrmn., asks bids until July 28 on proposed street improvements; bonds \$50,000; J. N. Ambler, Consult. Engr., Winston-Salem, N. C. (See Machinery Wanted.)

N. C., Greensboro.—Irving Park Co., R. C. Hood, Mgr., will construct 4 mi. concrete, tarvia or other monolithic paving; date of opening bids not set.

N. C., Greensboro.—Gullford County Commissioners, Greensboro, will consider construction of road from Greensboro to Randolph county line; Randolph County Commissioners, Ashboro, propose to continue road from county line to Ashboro.

N. C., Jackson.—Rich Square township of Northampton county voted \$20,000 bonds to construct roads. Address County Commrs.

N. C., Marshall.—Madison county will grade about 10.2 mi. road, divided into 4 sections leading out from Marshall and Hot Springs; bids until July 23; J. B. Clingman, County Road Engr. (See Machinery Wanted.)

N. C., Old Fort.—Old Fort Township Highway Com., P. H. Mashburn, Chrmn., will improve central highway from Greenlee, N. C., to Old Henry, N. C., about 9½ mi.; grading and surfacing with gravel; pipe and concrete culverts; about 71,000 cu. yds. excavation and 12,000 cu. yds. gravel in place; plans and specifications in office of chairman.

N. C., Statesville.—City will pave about 2 blocks W. Broad St. with bituminous macadam and 1 block of Mulberry St. Address The Mayor.

Okl., Poteau.—City, R. S. Bridgman, Mayor, will apply proceeds of \$10,000 bonds (lately noted voted) to graded and oiled or macadam construction on township roads entering Poteau.

S. C., Greenwood.—City is reported to vote on \$50,000 street improvement and refunding bonds. Address The Mayor.

Tenn., Benton.—Polk county contemplates voting on bonds to construct road from Ducktown to Benton. Address County Commrs.

Tenn., Chattanooga.—City let contract Noll Construction Co., Chattanooga, at \$250.33 to pave Highland Park Ave. from Main to 14th St., and at \$30,621.15 to pave Willow St. from Main to E. 5th St.; asphaltic concrete paving; A. N. Sloan, Commr. Dept. Streets and Sewers. (Call for bids lately noted.)

Tenn., Dyersburg.—City will pave 9 streets with asphalt. Address The Mayor.

Tenn., Erwin.—Unicoi county votes Aug. 22 on \$100,000 bonds to construct roads. Address County Commrs.

Tenn., Henderson.—Chester county will vote in Aug. on \$50,000 bonds to construct roads. Address County Commrs.

Tenn., Jonesboro.—City's (lately noted) \$15,000 bond issue was for work nearing completion; S. W. Kirkpatrick, Recorder.

Tenn., Loudon.—Loudon County Court voted to issue \$50,000 additional bonds for road work now progressing.

Tenn., Lewisburg.—City, J. A. Loyd, Mayor, will construct about 11,000 sq. yds. bituminous macadam; 10,000 sq. yds. plain macadam and 1200 lin. ft. storm sewer; bids until July 25; R. C. Fergus, City Engr.; previously noted. (See Machinery Wanted.)

Tenn., Tazewell.—Clatsop county will construct 65 mi. roads; \$365,000 available; date of opening bids, etc., not decided; Judge J. H. S. Momson, official in charge.

Tex., Corsicana.—City let contract Bert Hahn Construction Co., Dallas, to pave W. Third Ave.

Tex., Corsicana.—Navarro county will construct gravel roads, including grading, bridges and culverts, in Road Dist. No. 3; bids until July 18; Geo. A. Duren, Consult. Engr., Courthouse; H. D. Johnson, County Auditor. (See Machinery Wanted.)

Tex., Denison.—City will grade and pave 600 block, and intersection of Barrett Ave., W. Main St. from Mirick to Barrett Ave., except 7 ft. in center of street occupied by Texas Traction Co.; estimated cost \$7550; A. B. Clenny, City Engr.; Robt. Gerlach, City Secy. (See Machinery Wanted.)

Tex., Groveton.—Road Dist. No. 2 of Trinity county will construct sand-clay roads; about 33 mi. clearing, grubbing, grading and culverts; Geo. M. Waller, Chrmn. Board, Trinity, receives bids until July 27; C. M. McKibbin, County Judge, Groveton. (See Machinery Wanted.)

Tex., Oakville.—Live Oak county is reported to vote in Aug. on \$100,000 road and bridge bonds; Whitsett Dist. is reported to have voted on \$40,000 road bonds. Address County Commrs.

Tex., Polytechnic.—City will grade and gravel 795 ft. Annis St., 2224 ft. Ave. G and 1050 ft. Essex Ave.; bids until July 20; W. H. Brown, City Secy. (See Machinery Wanted.)

Tex., San Antonio.—City, Hans Helland, City Engr., let 50 contracts at \$77,741 to pave streets: Uvalde Rock Asphalt Co., Beaumont, \$8551, Romana St., river to Augusta St.; \$1866, Augusta St., Romana St. to Richmond Ave.; \$11,408, Richmond Ave., Augusta St. to Main Ave.; \$10,017, W. Laurel St., N. Flores St. to Pecos St.; \$8353, Arkansas St., S. Flores St. on block east; \$7060, Peirelda St., Garden to S. Alamo St.; \$5634, Johnson St., Alamo St. to River Ave.; \$7588, Beauregard St., river to S. Alamo St.; \$3632, E. Nueva St., Garden to Alamo St.; \$4462, Temple St., Adams to Garden St.; \$2286, Jefferson St., Pecan to Martin St. Beebe Construction Co., \$39,894, Lakeview Ave., Smith to Cameron St.; \$73,282, Hackberry St., Commerce to Grayson St.; \$50,128, Hackberry St., Denver to Commerce St.; \$14,286, 3d St., Ave. C to Ave. B; \$26,853, Labor St., Carolina to Goliad St.; \$15,719, Camargo St., Labor to S. Presa St.; \$20,617, Water St., Lavaca to Commerce St. Western Paving Co., \$8016, Josephine St., Jones Ave. to river; \$3226, Pecan St., St. Mary's to Navarro St.; \$19,886, Hays St., Chestnut St. to New Braunfels Ave. Western Construction Co., \$2445, Pecan St., Jefferson St. to Ave. C. Texas Granitoid Co., San Antonio, \$15,976, McCullough Ave., Dewey Pl. to Woodlawn Ave.; \$34,519, Belknap Pl., Dewey Pl. to King's Highway; \$9243, Martin St., 3d to St. Mary's St.; \$15,299, Arsenal St., Laredo St. to river; \$85,644, Garden St. and Roosevelt Ave., Peirelda St. to Ends Ave. Eureka Paving Co., Carter Bldg., Houston, \$18,109, Macon St., Main to Jones Ave.; \$8668, Bowie St., Nacogdoches to Commerce St. Roach-Manigan Paving Co., Memphis, Tenn., \$12,653, St. Mary's St., Travis St. to river; \$5103, Taylor St., Martin to 4th St.; \$4367, Bonham St., Nacogdoches to Commerce St.; \$4876, Las Moras St. from San Fernando St. to Saunders Ave.; \$11,755, Military Plaza, east side, including Dolores St. intersection; \$5387, Moyer Blvd., Hackberry to Cherry St.; \$16,718, Presa St., river to Alamo St.; \$1240, Eads Ave., Roosevelt Ave. to Presa St.; \$7556, Mitchell St., Roosevelt Ave. to S. Presa St.; \$1240, Gemler St., S. Presa to Graden St. Standard Roofing Co., \$22,024, Starr St., Chestnut to Pine St.; \$14,520, New Braunfels St., Van Ness to Grayson St.; \$13,432, Plum St., Santa Clara Ave. to Goliad St.; \$3429, Wyoming St., Plum to Walnut St.; \$2393, N. Laredo St., Morales to N. Flores St.; \$17,954, Cameron St., Commerce to extension of Morales St. M. A. Swatek & Co., \$14,080, Burnet St., Hackberry to Chestnut St. Texas Bitulithic Co., Dallas, \$61,556, Woodlawn Ave., Belknap St. to Fredericksburg Rd. Rushmore & Gowdy, \$9676, Sycamore St., Commerce to North St.; \$2230, Santa Clara Ave., Lafitte to Plum St.; \$13,083, Carolina St., Cherry to S. Presa St.

Tex., Tyler.—Winona Dist. of Smith county is reported to have voted \$25,000 bonds for road construction. Address County Commrs.

W. Va., Danville.—Town will construct 8000 ft. concrete sidewalks 4 ft. wide; bids opened July 18; Afton Jackson, Mayor. (See Machinery Wanted.)

W. Va., Huntington.—Cabell County Commrs. let contract Walter Ullom for 1 mi. paving on Hamline Pike.

W. Va., Wellsburg.—Brooke county contemplates voting in fall on bonds to improve roads; county court allows \$700, and \$2000 is being subscribed, these amounts (\$2700) to be used in making preliminary surveys of county roads; Geo. C. Wells, Commr., Wellsburg Dist.

W. Va., Williamson.—Mingo county votes Aug. 11 on \$500,000 bonds to construct roads. Address County Commrs.

## SEWER CONSTRUCTION

Ala., Birmingham.—City will construct sanitary sewers in East Birmingham; estimated cost, \$18,000; bids July 14; City Engr. Julian Kendrick will draw ordinance to replace 6 and 8-in. sanitary sewers in business districts with larger sewers; work to include about 5 mi. 8, 10, 12 and 30-in. sewer; estimated cost, \$20,000.

Ala., Birmingham.—City let contract to Jordan & Phillips, Birmingham, for following sewer work: East Lake, 18,530 lin. ft. 8 to 12 in. clay pipe, 4 to 6 ft. and 4 to 14 ft. deep; 1000 cu. yds. rock, 1200 Y's and 60 manholes; cost \$11,454; Owen-ton, 15,800 lin. ft. 8 to 10 in. clay pipe, 4 to 14 ft. deep; 43 manholes, 600 cu. yds. rock, 1050 Y's, 35 bends, 175 lin. ft. 4-in. risers and 20 4x4 breeches; cost \$9000; 7th Al., between 26th and 29th Sts., at \$287; let contract to

L. O. Scruggs, Birmingham, for sanitary sewers at 16th Al. and 28th St. at \$574.50; Julian Kendrick, City Engr. (Portions of work lately noted.)

Ala., Birmingham.—City will construct sanitary sewers in Gate City; cost \$20,000; Julian Kendrick, City Engr.

Ark., Clarendon.—City let contract to McEachin & McEachin, McAlester, Okla., to construct sewer and water systems. (Bids lately noted.)

Ark., Siloam Springs.—City, J. H. Perry, Mayor, will install lately-noted sewers; plans are in preliminary stage.

Fla., Clearwater.—City votes Oct. 6 on \$18,000 bonds to construct sewers. J. R. Jeffords, Mayor. (See Road and Street Work.)

Fla., Dade City.—City engaged J. B. McCrary Co., Atlanta, Ga., to construct sewer system and water-works; lately noted to have voted \$6500 bonds.

Ga., City View, P. O. Columbus.—City voted July 9 on \$6000 sewer bonds. Address The Mayor.

Ga., Manchester.—City is reported as considering construction of sewer system and water-works; J. N. Hazelhurst & Son, Atlanta, Ga., Engr.

Ga., Social Circle.—City is reported as having plans by J. B. McCrary Co., Atlanta, Ga., for sewer system and water-works.

Ky., Louisville.—City will construct sewer in Clifton, draining Locust, Charleton, Pope, State and other streets; David R. Lyman, City Engr.

Ky., Oakdale, P. O. Louisville.—Roy Burks, Sewer Engr. Louisville Board of Public Works, is preparing plans for sewer system in Oakdale, suburb of Louisville; contemplates expending \$35,000 in improvements, including paving of 2 mi. of streets.

Miss., Belzoni.—City, W. S. Knotts, Mayor, will construct about 3 mi. 8 to 12-in. diam. vitrified pipe sewers, with manholes, flush tanks, etc.; also install sewage pumping plant; bids until Aug. 4; Robo Engineering Co., Engr., Clarksdale, Miss. (See Machinery Wanted.)

Mo., Carthage.—City will construct trunk sewer; estimated cost, \$25,000; bids until July 28; Jas. B. Lloyd, City Clerk.

Mo., Carthage.—City will construct sanitary sewer in western portion of city; Council invites bids. Address The Mayor.

Mo., Towson.—Baltimore County Commrs. received proposition from Ezra B. Whitman, 1305 John St., Baltimore, to construct sewer systems where needed in county; estimates cost of systems at Towson, Arlington and Govans at \$150,000.

Okl., Sapulpa.—City voted bonds to construct sanitary sewers. Address The Mayor.

S. C., Woodruff.—City, J. E. Ezell, Clerk, voted \$23,000 bonds for sewer construction. (Lately noted.)

Tenn., Lewisburg.—City will construct about 1200 lin. ft. storm sewer; bids until July 25; R. C. Fergus, City Engr. (See Road Street Work and Machinery Wanted.)

Tex., Ferris.—City, L. D. Johnston, Mayor, will construct sewers; \$16,000 authorized. (Previously noted.)

Tex., Houston.—City will construct sanitary sewers on Welch St. from G. H. & S. A. Ry. to Euclid Ave., Andrew St. from Helner to Wilson, and Wilson St. from Andrew to San Felipe; bids until July 20; Ben Campbell, Mayor; E. E. Sands, City Engr. (See Machinery Wanted.)

Tex., San Antonio.—City let contract Truehart & Jackson at \$13,070 to construct sewers in Seventh ward; Bailey & Reeder at \$16,003, Peach St. Dist.; San Antonio Engineering & Construction Co. at \$4532, Degnowity Hill Dist.; Hans Helland, City Engr. (Call for bids to construct various sewers lately noted.)

## TELEPHONE SYSTEMS

N. C., Rural Hall.—Lewisville-Yadkinville Telephone Co., capital \$3000, inceptd. by H. L. Wilson, M. H. Hauser and others.

Tex., San Benito.—City granted franchise S. A. Robertson, as trustee, to furnish telephone, light and water service; will make improvements.

W. Va., Huntington.—City contemplates voting on \$3000 bonds to extend Gamewell police telegraph system. Address City Commrs.

## TEXTILE MILLS

Ala., Lanett.—Cotton Cloth.—Lanett Cotton Mills contemplates installing additional machinery.

Ga., Griffin.—Cotton Cloth.—Rushton Cotton Mills will install 5000 additional spin-

dies; present equipment 15,000 spindles and 400 looms.

Mo., Hagerstown.—Hosiery.—Antietam Knitting Co. is reported to rebuild hosiery mill reported burned at loss of \$75,000.

Mo., Frostburg.—Hosiery.—Parker Hosiery Mills will add 10 knitting machines; plans installing 40 additional machines.

N. C., Mayesworth.—Cotton Yarn.—Mayes Mfg. Co. let contract T. C. Thompson & Bros., Charlotte and Birmingham, Ala., to construct additional mill building; has 18,684 ring spindles, 50 cards, etc.

Okl., Tulsa.—Linen.—Tulsa Commercial Club negotiating for construction and equipment of linen mill.

Tenn., Englewood.—Knitting Yarn.—Eureka Cotton Mills let contract for erection 135x76 ft. addition of brick mill construction, costing \$7750; ordered about 3300 spindles, etc., costing \$25,000; about doubling equipment.

## WATER-POWER DEVELOPMENTS

Ala., Falls City.—D. W. Day, Hartselle, Ala., proposes to construct hydro-electric plant with 12 mi. transmission system to Jasper; will at first develop 500 H. P.; has 2000 H. P. available; now inviting plans on machinery. (See Machinery Wanted.)

Ga., Conyers.—Panola Light & Power Co. proposes \$50,000 capital increase to add 500 H. P. unit to hydro-electric plant; now developing 300 H. P. and transmitting electricity 30 mi. to Conyers and Lithonia, Ga. (See Machinery Wanted.)

Ga., Milledgeville.—Oconee River Mills Co. opens bids July 13 for water wheels, electrical machinery and reinforced concrete power-house; Engrs., Hall Bros., Peters Bldg., Atlanta, and J. N. Elvy, Atlanta. (Previously noted.)

La., Shreveport.—Clifford Brooks is reported as planning organization company, capitalized at \$1,000,000, to develop water-powers, construct electric plants, etc.; Mr. Brooks to be vice-president.

N. C., Moravian Falls.—Moravian Falls Milling & Power Co., J. T. Humphries, Mgr., expects to construct 35-ft. dam to replace present wooden dam; now developing 60 H. P.; has 110 H. P. available.

Tex., Gonzales.—Gonzales Water Power Co., Frank S. Taylor, Engr., Austin, Tex., invites bids until July 20 to construct reinforced concrete dam across Guadalupe River at Gonzales; plans and specifications at offices of engineer and of company; later lately noted as having final plans for hydro-electric plant to include 5 dams between Seguin and New Braunfels, providing reservoir of 150,000 acre ft. and hydro-electric plant to develop 100,000 H. P.; transmit electricity to Gonzales, Seguin, New Braunfels, San Antonio and other cities within 60 mi. radius of Seguin; estimated total cost \$8,000,000. (Recently noted.)

Va., Fort Defiance.—Fort Defiance Milling Co., J. S. Norford, Mgr., contemplates installing hydro-electric plant; supply electricity for lighting at Fort Defiance and New Hope, 1½ mi. distant; estimate has been prepared by electrical engineer.

W. Va., Gary.—Tug River Power Co., capital stock \$10,000, inceptd. by J. J. Stout, G. C. Sledge, J. H. Barker and others; construct hydro-electric plant on Tug River.

## WATER-WORKS

Ark., Clarendon.—City let contract to McEachin & McEachin, McAlester, Okla., to construct water and sewer systems. (Bids lately noted.)

Fla., Clearwater.—City votes Oct. 6 on \$5000 bonds to extend water-works; J. R. Jeffords, Mayor. (See Road and Street Work.)

Fla., Dade City.—City engaged J. B. McCrary Co., Atlanta, Ga., to construct water-works and sewer system; lately noted to have voted \$20,000 bonds.

Fla., Plant City.—City will vote on \$20,000 bonds to extend water-works. Address The Mayor.

Fla., Tallahassee.—City defeated \$4000 bonds to relay water mains and \$9000 bonds to improve and extend gas, electric-light and water plants. (Lately noted.)

Ga., Brunswick.—City votes July 22 on \$16,500 water-extension bonds and \$13,500 fire-department bonds. Address The Mayor.

Ga., Chatsworth.—City votes Aug. 5 on \$13,000 bonds for water-works. Address The Mayor.

Ga., Manchester.—City is reported as considering construction of water-works and sewer system. Address The Mayor.

Ga., Social Circle.—City is reported as



having plans by J. B. McCrary Co., Atlanta, Ga., for water-works and sewer system.

Ky., Hazard.—Claude Orr, Crossland, Ky., is reported to construct water-works.

Ky., Lawrenceburg.—City is reported to build pumping station on Salt River. Address The Mayor.

Ky., Providence.—City contemplates constructing water-works. Address The Mayor.

Md., Crisfield.—City let contract Charles Owens, Bridgeville, Pa., at \$6994 to extend water-works; 11,000 ft. 4 and 6-in. pipe, with hydrants, valves, etc.; Lorie C. Quinn, Mayor. (Call for bids lately noted.)

Md., Easton.—City, Jas. B. Clark, Clerk, sold \$29,000 bonds to install water-works. (Previously noted as voting to purchase plant of Easton Water Co.)

Mo., Butler.—City is having plans prepared by Harper & Stiles, Grand Ave. Temple, Kansas City, for water-works; cost \$75,000; H. E. Cook, Mayor. (Bond issue lately noted.)

Mo., Kansas City.—Water Dept., Burton Lowther, Ch. Engr., has not decided all details relative to lately-noted improvements at Turkey Creek pumping station; remove present pump and replace with 20,000-gal. equipment; pump and foundation to cost about \$150,000; triple-expansion crank and flywheel pumping engine; bids opened some time in Oct.; no building.

Mo., Palmyra.—City voted \$32,000 bonds to improve water and light plants; improvements to water plant to include filtering plant. Address The Mayor. (Lately noted.)

Mo., Rockport.—City contemplates extending water-works, expending \$12,000; John T. Wells, City Clerk.

Okla., Billings.—City voted \$23,000 bonds to construct water-works. Address The Mayor.

Okla., Tahlequah.—City, A. B. Shipley, Mayor, will vote Aug. 4 on \$15,000 bonds for water-works extension; concrete dam and iron pipe. (Lately noted.)

S. C., Woodruff.—City, J. E. Ezell, Clerk, voted \$37,000 bonds for water-works construction. (Lately noted.)

Tex., Alta Loma.—City let contract Layne & Bowler, Houston, at \$13,000 to drill 2 wells.

Tex., Fort Bliss.—Government let contract Mayfield & Shaw at \$15,000 to extend water-works; Wm. E. Hunt, Depot Quartermaster, El Paso. (Call for bids lately noted.)

Tex., Livingston.—City is having plans prepared by Brown & Wilder, Houston, for water-works; votes Aug. 20 on \$25,000 bonds.

Tex., New Boston.—City will construct water-works; include drilling battery of shallow wells, laying about 3800 ft. 6 in. and 1350 ft. 4 in. cast iron water pipe; 4800 ft. 2 in. galvanized iron pipe, 6 hydrants and 6 gate valves; 2 oil engines and triplex pump and power-house; 100 ft. 50,000 gal. tower and tank; bids until Aug. 3; Nagel & Petersen, Engrs., Muskogee, Okla.; O. B. Pirkey, Mayor. (See Machinery Wanted.)

Tex., San Benito.—City granted franchise to S. A. Robertson, as trustee, to furnish water, light and telephone service; will make improvements.

Va., Marion.—City votes in August on \$20,000 bonds to extend water-works. Address The Mayor.

W. Va., Huntington.—City will vote on \$500,000 bonds to construct water-works. Address City Commrs.

### WOODWORKING PLANTS

Ark., Argenta.—Crescoted Shingles.—Argenta Shingle Crescoting Co., E. O. Manees, Pres., will erect \$5000 building; install engine, boiler, pipe, chimes, roofing, etc.; daily capacity 250,000 crescoted shingles. Address building proposals, etc., to J. G. Paty. (Lately noted organized, capital \$10,000, to establish plant to mfr. shingles crescoted by Paty process.)

Ark., Bentonville.—Cooperage.—E. T. Peck Cooperage Co., E. T. Peck, owner, will lease building for mfr. of slack barrels; daily capacity 300 to 800. (Lately noted organized.)

Ark., Kensett.—Staves.—Chess & Wymond Stave Co., Louisville, Ky., is reported to build \$40,000 finishing plant.

Ga., Rome.—Barrels and Headings.—Jesse Scoggins, 505 W. 7th St., states has sold interest in Standard Cooperage Co. and will erect another mill upon finding suitable location; looking for well-timbered land; interested in second-hand machinery. (See Machinery Wanted.)

La., Morgan City.—Shingles.—Chapman-Storm Lumber Co. will erect lately-noted shingle mill; daily capacity 125,000 cypress shingles; install equipment, largely using second-hand machinery.

La., Shreveport.—Silos.—Peavy-Byrnes

Lumber Co. will install equipment to manufacture patented silo; machinery ordered.

Tex., Houston.—Sash and Doors.—Robinson Sash & Door Co., capital stock \$5000, inceptd. by H. M. Duncan, E. G. Robinson, J. F. Howell and J. F. Sloan.

### FIRE DAMAGE

Ala., Birmingham.—Excelsior Laundry Co.'s plant; estimated loss \$15,000.

Ala., Birmingham.—J. M. Steele's residence damaged; loss \$3000.

Ala., Birmingham.—Maj. Milner's building, occupied by Barbour Plumbing, Heating & Electric Co.; Morris Real Estate Co.'s building, occupied by Meyer-Marx Wholesale Liquor Co.; loss about \$75,000.

Ala., Florence.—Three buildings owned by Young estate; loss \$70,000.

Ala., Northport.—Residence owned by Mrs. Vina McGehee and occupied by L. B. Cornelius; loss \$3000.

Ala., Tuscumbia.—Building owned by J. T. Kirk and J. E. Isbell, loss \$15,000; E. L. Bickey estate's building, loss \$10,000; Aycock & Kirk's building, loss \$12,000 to \$15,000.

Ark., Fort Smith.—Fort Smith Rim & Bow Co.'s finishing plant; loss \$10,000.

Ark., Malvern.—J. M. Clem & Son's saw and grist mill and cotton gin; loss \$5000.

Ga., Americus.—J. W. Watts' residence near Americus; loss \$5000.

Ga., Resaca.—S. M. Bennett's flour mill, loss \$5000; W. M. Taylor's blacksmith shop, loss \$2000; J. G. Fite's planing mill, gin-house, store, etc., loss \$2000.

Ga., Waynesboro.—Burke County Poor-house was not burned as lately reported; W. G. Green, Clerk.

Ky., Frankfort.—Kenney Bros.' mill and lumber yard; loss \$30,000.

Ky., Jenkins.—Millard Burke & Co.'s store and residence; Cohen & Stryk Bros.' store; Samuel Adams' residence; loss \$15,000.

La., Mandeville.—About 150 to 200 ft. of St. Tammany-New Orleans Ry. & Ferry Co.'s 1000-ft. pier; loss \$8000 to \$10,000.

La., Winnsboro.—Rising Star newspaper plant, loss \$1200; Winnsboro Bakery, loss \$1200.

Md., Hagerstown.—Antietam Knitting Co.'s hosiery mill; loss \$75,000.

Miss., Natchez.—Walter Babin's residence; C. B. Richardson's residence; loss \$7000.

Mo., St. Louis.—Chas. H. McKee's residence, "Courtright Hall"; loss \$35,000.

Okla., Wilburton.—Givens Hotel, Saml. Givens, Prop., loss \$13,000; Wilburton News, loss \$5000.

S. C., Aiken.—C. Oliver Iselin's barn and stables.

S. C., Clio.—Mrs. W. D. James' warehouse.

Tenn., Covington.—John Craig's warehouse; loss \$15,000.

Tenn., Medon.—R. B. Swink's building, loss about \$10,000; R. W. Young's, N. C. McDaniel's, Mrs. R. N. Sullivan's, Miss Sallie Pirtle's buildings; total loss about \$50,000.

Tenn., Memphis.—Taylor Grain Co.'s elevator; estimated loss \$25,000.

Tenn., Nashville.—Mulloy Grocery Co.'s store; loss on building, owned by T. Garland Tinsley, \$10,000.

Tenn., Tiptonville.—Harper House, L. M. Harrell, Prop.; J. G. Jones' livery barn; total loss \$15,000.

Tex., Abilene.—Mrs. Anna D'Spain's residence at 218 Cedar St.; loss \$3000 to \$4000.

Tex., Dallas.—Residence at 901 W. 9th St., occupied by M. E. Pope and owned by Mrs. J. R. Baird, 1716 Cadiz St.; loss \$4000.

Tex., Hillsboro.—Turk Dry Goods Co.'s store; loss \$20,000.

Tex., Houston.—Building owned by A. L. Bowers of Palestine, Tex.; loss \$10,000.

Tex., Palmer.—M. O. Jones' building; John Stacks' building; total loss \$11,500.

Tex., Roanoke.—Adolphus Hotel.

Tex., Wolfe City.—R. F. Akridge's residence; loss \$4000.

W. Va., Barboursville.—B. A. Allen's residence; loss \$15,000.

### BANK AND OFFICE

Ala., Eufaula.—Bank of Eufaula is improving building, including additional fixtures, building balconies for additional office and floor space, etc. (Lately noted.)

Fla., Ellenton.—Ellenton State Bank will erect bank building; about 20x50 ft.; brick; Carey roofing; cost \$2500. Address E. W. and L. D. Stapleton, Zephyrhills, Fla.

Fla., Kissimmee.—R. D. Waring will expend \$10,000 to erect office building; 50x70 ft.; ordinary construction; Barrett's specification roof; electric lighting; R. H. Lullan, Archt., Kissimmee; date of opening bids not set. (Lately noted.)

Fla., Miami.—Tatum Bros. are reported to have leased site at 12th St. and Ave. C, 50x120 ft., and interested in organizing trust company to erect building; 7 to 9 stories; cost at least \$125,000.

Ga., Savannah.—Citizens and Southern Bank will expend \$40,000 (cost without mechanical equipment) to erect addition to 6-story office building; plans ready for estimates about July 16; Mowbray & Uffinger, Archts., 56 Liberty St., New York. (Lately noted to have plans about July 6.)

Ky., Louisville.—Knights of Pythias have plans by Henry Walters, Board of Trade Bldg., Louisville, for office building; reinforced concrete; 6 stories; 100x64 ft.; reported cost, \$100,000; bids reported received about August 1.

La., New Orleans.—Interstate Trust & Banking Co. is reported to have plans by Diboll, Owen & Goldstein, New Orleans, for improvements to Interstate Bldg. at Camp and Canal Sts. at cost of \$30,000 to \$40,000; will change entrances, move elevators and stairways, etc.

Mo., St. Louis.—Mound City Photoplay Co. is reported to have plans for office and theater building. (See Theaters.)

Mo., St. Louis.—Union Electric Light & Power Co. is reported contemplating erecting office building, etc. (See Electric Plants.)

W. Va., Academy.—Bank of Hillsboro contemplates erecting bank building; plans not made; address G. W. Callison.

W. Va., Charleston.—Mrs. A. Borarsky will expend \$50,000 (cost without mechanical equipment) to erect office and store building. (See Stores.)

W. Va., Charleston.—Charleston Electric Supply Co. will erect office and store building.

W. Va., Charleston.—Charleston National Bank will erect addition to building; 6 stories; about 100 additional rooms.

W. Va., Charleston.—Glendale Lodge No. 78, Knights of Pythias, will erect building for offices, etc. (See Association and Fraternal.)

### CHURCHES

Ark., Hot Springs.—Building Com. of Central Avenue Methodist Episcopal Church South receives bids until July 25 to erect stone church, including excavation for ground floor; plans and specifications at office of W. S. Sorrells, Hot Springs, and John Galsford, Archt., 408-10 Goodwyn Institute, Memphis, Tenn.

Ga., Lenox.—Methodist church will erect building. J. D. Robinson, cashier Bank of Lenox, is interested.

Ga., Rochelle.—Baptist Church, Rev. Walter M. Lee, pastor, invites architects to submit plans for \$20,000 building. (See Machinery Wanted.)

Ky., Louisville.—Sisters of Mercy will erect chapel at 218-22 E. College St.; cost \$10,000.

La., Monroe.—Saml. Kaplan, Chrmn. Building Com., receives bids until Aug. 6 to erect temple for Congregation of B'nai Israel; separate bids for general contract, exclusive of trim and decoration work in temple auditorium, heating, plumbing and lighting; plans and specifications at office of Mr. Kaplan at Monroe and Stevens & Nelson, Archts., Liverpool & London & Globe Bldg., New Orleans; structure of pressed brick and terra-cotta; synagogue and assembly hall on 1st floor and Sunday-school room on 2d floor of rear portion; synagogue to extend through 2 stories; slate and composition roof; fan system of hot-air heat and ventilation; electric lights; organ; blackboards, etc. (Lately noted.)

Md., Baltimore.—Trinity Lutheran Church has plans by Haskell & Barnes, 301 N. Charles St., Baltimore, for building at Baltimore and Pulaski Sts.; contractors estimating are: Walter E. Burnham, Law Bldg.; Milton C. Davis, 15 E. Fayette St.; Wm. N. Hildebrand, 112 N. Payson St.; John Hiltz & Son, 3 Clay St.; Thos. B. Standfield Co., 109 Clay St.; B. F. Bennett Building Co., 123 S. Howard St.; A. Knell, Jr., 215 St. Paul St.; J. Henry Smith, 1436

## BUILDING NEWS

### BUILDINGS PROPOSED

#### APARTMENT-HOUSES

Fla., St. Petersburg.—Mrs. M. A. Borden will erect apartment-house at 5th St. and Third Ave.; 23 apartments; cost \$6000.

La., New Orleans.—E. F. Spori has plans for apartment-house in square bounded by Banks, Olympia, St. Patrick and Baudin Sts.

Md., Baltimore.—Skipworth Inn, care of Mortgage & Securities Co., 111 N. Charles St., will remodel St. James Hotel at Charles and Center Sts. for apartment-house, and is receiving bids for various portions of work required; plans include changing entrance, painting, installing electric light and steam heating systems, electric elevator, etc.; estimated cost of improvements \$10,000 to \$15,000.

Mo., St. Louis.—Heston Investment Co will erect 4-room steam-heated flat buildings on 75-ft. site on Cote Brillante Ave.

Mo., St. Louis.—Miss Ida Frank has plans by P. J. Bradshaw, St. Louis, for apartment-house on Berlin Ave. near Laurel St.; 3 apartments of 7 rooms and reception hall; English style; hard red brick walls; interior finish of oak and cypress; wood cornice and beam ceilings in living and dining rooms; tile floors in entrance lobby and baths.

Mo., St. Louis.—Pomeroy Building Co. will erect two 3-story tenements at 6100-04 Berlin St.; cost \$30,000.

Mo., St. Louis.—Arthur Hess will erect 2-story tenement-house at 3960 Lafayette St.; cost \$4500.

Mo., St. Louis.—John W. Koester will erect 4 and 5-room flat on Chester Pl.

Mo., St. Louis.—Emile Zimmerman will erect three 5 and 6-room flats on Clarence Ave.

Mo., St. Louis.—Jno. Grewe Construction Co., Century Bldg., will expend \$6200 each to erect three 2-story tenement-houses; 28x50 ft.; joist construction; composition roof; hot-water heat to cost \$1500. (Lately noted.)

Okla., Tulsa.—E. Thompson will erect two-story brick apartment-house on S. Main St.; 42x72 ft.; cost \$8400.

Tenn., Memphis.—M. F. Dominick will erect apartment-house at 1966 Madison Ave.; cost \$3000.

Tenn., Memphis.—B. C. Wood will erect 4-apartment flat at Jefferson Ave. and Watkins St.; cost \$15,000; H. T. McGee, Archt., Memphis.

Tenn., Nashville.—Gus Demerick will erect 2-story brick apartment-house on Grand Ave.; cost about \$7000.

Va., Richmond.—Atlantic Construction Co. has permit to erect 2-story brick tenement on Harrison St.; cost \$3000.

#### ASSOCIATION AND FRATERNAL

Ky., Louisville.—Knights of Pythias are having plans prepared for building. (See Bank and Office.)

Ky., Shelbyville.—Executive Board of Old Masons' Home, Howard R. French, Chrmn., Mt. Sterling, Ky., has sketches by Arthur Loomis, Louisville, for infirmary; ornamental stone gateway and drives.

Mo., Charleston.—Y. M. C. A. is having plans prepared for building.

Tenn., Knoxville.—A. F. & A. M. open bids Aug. 1 to remodel building for Masonic Temple; cost \$20,000; ordinary construction; gravel roof; steam heat; gas and electric lighting; cement sidewalks; Albert B. Baumann, Archt., 713 Henson Bldg., Knoxville. (Lately noted.)

Va., Stuart.—Mountain Home Lodge, A. F. and A. M., will erect business and lodge building; 3 stories.

W. Va., Buchanan.—Knights of Pythias Home Board, it is reported, selected site for State Home to cost \$100,000.

W. Va., Charleston.—Glendale Lodge No. 78, Knights of Pythias, will erect building at Tennessee Ave. and Fayette Sts.; 4 stories; probably brick; 80x120 ft.; will contain store, lodgerooms and offices; cost \$25,000.

W. Va., Parkersburg.—A. F. & A. M. have plans by Frank L. Packard, Columbus, O., for Masonic Temple; 68x120 ft., 80 ft. high; 3 stories; lower floor, granite; upper floors, brick with stone trimmings; fireproof; to contain bowling alleys, library-room, etc. contain bowling alleys, library-room, etc.; plans ready for estimates in about two weeks. (Lately noted.)

Light St.; Thos. L. Jones & Son, 410 W. Saratoga St., all of Baltimore; bids due July 23.

N. C., Kenly.—Presbyterian Church, Rev. G. F. Kirkpatrick, pastor, will erect brick building; cost about \$9000.

S. C., Aiken.—Cumberland Methodist Church is erecting \$6500 building. Address The Pastor.

S. C., Aiken.—First Baptist Church is having plans prepared by J. M. McMichael, (Charlotte, N. C., for building. (Lately noted.)

Tenn., Chattanooga.—Highland Park M. E. Church South, Rev. P. L. Cobb, pastor, will soon let contract to complete building; cost about \$13,000.

Tex., Coleman.—Baptist church contemplating erecting building; brick. Address The Pastor.

Tex., Coleman.—Methodist Church South will erect building; cost \$35,000 to \$40,000. Address The Pastor.

Tex., El Paso.—St. Patrick's Church is reported to erect cathedral to cost \$100,000. Address The Pastor.

Tex., Goldwithe.—Progressive Christian Church approved plan for building; brick or concrete. Address The Pastor.

Va., Berkeley, Station Norfolk.—Liberty St. M. E. Church will erect building. Address The Pastor.

W. Va., Charleston.—St. Paul's Evangelical Lutheran Church will soon let contract to erect building on Court St.; cost \$40,000; Weber, Werner & Adkins, Architects, Cincinnati.

### CITY AND COUNTY

Ark., Warren.—City Hall.—City is considering plans for city hall; cost \$8000. Address The Mayor.

Ark., Jonesboro.—City Hall.—City Hall Commrs., Young A. Cole, Chrmn., and R. West, Secy., will consider sites for \$75,000 city hall.

D. C., Washington.—Shelters, etc.—Dist. Commrs. receive bids at office of Secy., 509 District Bldg., until July 22 to erect shelters, yards, weighmaster's office, lunch room, toilets, etc., in open space between 10th and 12th and B and Little B Sts. N. W.; plans and specifications at office of Chief Clerk, Engr. Dept., Room 427 District Bldg.

Fla., Miami.—Municipal.—City is considering tentative plans for municipal building; first floor to house electrical equipment for street and sanitary departments; second and third floors, offices; J. W. Watson, Mayor.

Ga., Bainbridge.—Hospital.—City will vote Aug. 12 on \$20,000 bonds to erect city hospital. Address The Mayor.

Ga., Swainsboro.—Jail.—Bids received by Commrs. of Roads and Revenues until July 9 to erect jail; 2 stories and basement; 43x33 ft.; brick and reinforced concrete; fireproof. (Lately noted.)

Miss., New Augusta.—Jail.—Perry County Commrs. are receiving bids to erect jail.

N. C., Salisbury.—Social Center and Workhouse.—Rowan County Commrs. are considering remodeling old courthouse for social center; will install electric lights, heating plant, etc.; also plans to erect brick building and establish workhouse or house of correction.

Okla., Blackwell.—Pavilion.—City voted \$40,000 bonds to erect pavilion in Electric Park. Address The Mayor.

S. C., Ridgeland.—Jail.—Jasper County Commrs., G. L. Langford, Supvr., receive bids until July 22 to erect jail and courthouse; bonds lately noted voted. (See Courthouses.)

S. C., Spartanburg.—City Hall and Jail.—City, J. B. Carlisle, Clerk, is conferring with W. A. Edwards, Archt., Candler Bldg., Atlanta, relative to plans for city hall and jail building; cost about \$25,000. (Lately noted considering erection of jail.)

Tenn., Greenville.—Library.—City rejected all bids to erect proposed Carnegie library. Address The Mayor.

Tex., Fort Worth.—Orphanage.—Tarrant County Commrs. are reported as probably to let contract July 27 to erect orphanage; plans in progress. (Lately noted.)

Tex., San Antonio.—Poorhouse.—Bexar county accepted plans for poorhouse; bids for construction received until July 16; fireproof; cost \$45,000.

W. Va., Charles Town.—Jail.—City will erect jail in rear of courthouse. Address The Mayor.

W. Va., Huntington.—Market-house and City Hall.—City Commrs. are considering calling election on \$10,000 bond issue to erect market-house and \$125,000 to complete city hall. (Previously noted.)

### COURTHOUSES

Fla., Miami.—Dade County Commrs. accepted plans by August Geiger, Miami, for addition to courthouse, and will call for bids to erect; fireproof construction for vaults and some rooms; style to conform with present structure; cost \$12,000 to \$15,000. (Lately noted.)

Fla., West Palm Beach.—Palm Beach county has plans by Talley, Summer & Hamilton, James Bldg., Jacksonville, for courthouse; 150x82 ft.; 3 stories and basement; fireproof; 3 entrances through porches supported by stone columns; Corinthian style; exterior walls, buff impervious brick trimmed with Indiana limestone and granite; granite step; reinforced concrete frame; asphalt and gravel roof with copper flashings; semi-direct lighting system; marble stairways with ornamental-iron railings; corridor and toilet-room floors of tile; Vermont marble wainscoting; vaults with reinforced concrete walls lined on inside, top, bottom and all 4 sides with self-supporting steel; air space between steel lining and concrete walls; cost \$183,700; will receive new bids for construction; previous contracts declared illegal. (Previously noted.)

Miss., Walthall.—Webster County Commrs. open bids Sept. 8 to erect courthouse; 61x191 ft.; fireproof; tile and composition roof; no heating nor lighting; cost \$40,000; Overstreet, Spencer & Paine, Archts., Merchants' Bank Bldg., Jackson, Miss.; plans ready Aug. 11; address proposals to Chancery Clerk. (Lately noted.)

N. C., Whiteville.—County Commrs. receive bids until Aug. 11 to erect courthouse; cost about \$45,000; J. F. Leitner, Archt., Wilmington, N. C. (Lately noted.)

S. C., Ridgeland.—Jasper County Commrs., G. L. Langford, Supvr., receive bids until July 22 to erect courthouse and jail; drawings and specifications at offices of H. Klugh Purdy, Atty., Ridgeland; Builders' Exchange, Atlanta, and Wm. A. Edwards, Archt., 632 Candler Bldg., Atlanta. (Lately noted voting \$40,000 bonds for courthouse and jail.)

Tenn., Erwin.—R. M. Barry, J. E. Sams, S. A. Corn, Bldg. Com., will receive bids until July 27 to remodel and improve courthouse; plans and specifications from Mr. Barry, First National Bank.

### DWELLINGS

Ala., Birmingham.—F. Macklin will erect two 1-story frame dwellings at Avenue H and 27th St.; cost \$6000; R. J. Beasley, contractor, Birmingham.

Ala., Ensley.—M. W. A. Watts will erect seven 1-story frame dwellings at Avenue C and 26th St.; cost \$3400.

Ala., Tuscaloosa.—T. D. Maxwell will erect concrete residence.

Ark., Little Rock.—E. D. Bracey will erect two 2-story brick dwellings, 2-story frame residence and 1-story bungalow; cost \$26,900.

D. C., Washington.—Middaugh & Shannon, Inc., 205 Colorado Bldg., will expend \$34,000 to erect 9 dwellings on Shepherd St. N. W.; brick and wood construction; tin roof; hot-water (American radiator) heat; gas and electric lighting; plans and construction by owner. (Lately noted.)

Fla., Lakeland.—E. O. Flood, Prest. of State Bank of Lakeland, is having plans prepared for residence.

Fla., Miami.—Anton Hullman, Terra Haute, Ind., will erect residence; 2 stories and basement; garage and boat basin; cost \$7500; Geo. L. Pfeiffer, Archt., Miami.

Fla., Miami.—Max Zapf will erect residence; 60x80 ft.; 2 stories; 9 rooms; cost \$7000; Geo. L. Pfeiffer, Archt., Miami; cost \$21,000.

Fla., Miami.—S. M. Tatum is having plans prepared by Geo. L. Pfeiffer, Miami, for residence on 12th St.; outdoor swimming pool; sunken garden; garage; fishpond; 2 stories and basement; cost \$25,000.

Fla., St. Petersburg.—Geo. E. Perkins will erect 8-room residence in Pomona Heights.

Fla., St. Petersburg.—Rev. Alex. Linn will erect residence.

Ga., Atlanta.—Wm. Rawlings is having plans prepared by Mr. Hobson, Atlanta, for residence in Druid Hills.

Ga., Augusta.—Geo. R. Lombard will erect 2 residences on Phillip St.; cost \$3000.

Ga., Atlanta.—Mrs. Anne C. H. Mathewson will erect two 1-story frame dwellings on Mathewson Pl.; cost \$5500; day labor.

Ga., Atlanta.—N. P. Cooledge will erect 2-story brick-veneer residence; cost \$5000; day labor.

Ga., Atlanta.—Mrs. E. A. Holbrooks will

erect 2-story frame dwelling at 319 Bedford Pl.; cost \$6000; day labor.

Ga., Augusta.—Major Geo. P. Elliott has plans by Thomas M. Campbell, 155 Johnson Bldg., Augusta, for bungalow, frame; 1½ stories; hot-air heat; hardwood floors; composition roof; tiled baths; rough texture brick for porch and terraces; cost \$7000.

Ga., Rome.—J. W. Keown will erect dwelling to cost \$3350.

Ga., Sandersville.—L. H. Holt will erect residence; probably frame; first floor hardwood; cypress shingles; ordinary construction; 12 rooms; electric lighting; cost \$7500.

Ga., Savannah.—Chas. G. Bochman will erect \$5000 concrete residence.

Ga., Savannah.—J. M. Long has plans by Wallin & Young, 612 Germania Bldg., Savannah, for alterations to residence; ordinary construction; tin roof; cost \$6000 to \$8000; bids opened.

Ga., Savannah.—J. H. Paulson has plans by Geo. S. Steinacker for dwelling 45x117 ft.; 2 stories; frame; slate roof; steam heat; cost \$6000.

Ga., Savannah.—Standard Investment Co. is erecting four dwellings; 2 stories; frame; metal shingles; rift pine floors; tiled baths; also bungalow for Geo. Frizzell; metal shingles; tiled baths; cost \$3000; plans for both by I. P. Crutchfield, 406 Real Estate Bank Bldg., Savannah.

Ky., Louisville.—Mrs. H. C. Williams will erect brick veneer dwelling at 120 Hillcrest St.; cost \$3000.

La., New Orleans.—F. F. Oser will erect double two-story dwelling at 1323 Nashville Ave.; cost \$3800.

La., New Orleans.—Mrs. Edgar Fordtran will erect 2-story brick veneer residence; cost \$15,000.

La., New Orleans.—Wm. B. Bear will erect double 2-story residence 1030 General Taylor St.; cost \$4000.

La., New Orleans.—L. G. Link will erect two 1-story residences; cost \$4000.

La., New Orleans.—A. C. Andry will erect residence at Claiborne and Soniat Sts.; 2 stories; frame.

La., New Orleans.—D. M. Hite, New Orleans, prepared plans for bungalows on Gentilly Ter. for W. N. Gruenwald, Mrs. J. C. Lindholm and Mrs. Wm. Zimmermann.

La., New Orleans.—Mrs. E. W. Evans will erect residence; 68.8x41 ft.; 2 stories; frame and stucco; tile roof; hardwood floors; hot-water heat; cost \$12,000; Favrot & Livaudais, Archts., New Orleans.

La., New Orleans.—Hugh McCloskey has plans by Favrot & Livaudais, New Orleans, for residence; 72.8x41.2 ft.; tile roof; hot-air heat.

La., New Orleans.—J. Adams has plans by Theard & Reilly, New Orleans, for bungalow at Sycamore and Lowerline Sts.

La., New Orleans.—M. G. Weil has plans by F. J. McDonald, New Orleans, for frame and stucco residence.

Md., Baltimore.—Geo. Klein, 2909 Lorman St., will erect 14 dwellings at Bentalou and Presbury Sts.; 2 stories; 11x45 ft.; cost \$28,000; W. B. Gerwig, Archt., 1023 N. Fulton Ave., Baltimore.

Md., Baltimore.—F. D. Durham, Towson, Md., will erect 2½-story cottage at Idlewild.

Md., Baltimore.—Lohmuller Bldg. Co. has plans by G. B. Lohmuller, 1725 N. Broadway, Baltimore, for 12 dwellings on Abbottston St. near Taylor St. and 7 on Taylor St. north of Abbottston St.; 15x44 ft.; ornamental brick; stone trimmings; cost \$21,000.

Md., Baltimore.—E. J. Storck, 86 Gunther Bldg., plans to erect ultimately 170 dwellings on Abell Ave., 32d, 33d St. and Guilford Ave.; latter to be 3 stories; others 2 stories; plans by Jacob Gerwig, 600 Equitable Bldg.; F. E. Beall, 306 St. Paul St., and Harry Storck, W. Winston Ave., all of Baltimore.

Md., Baltimore.—Jas. B. Yeatman, 4742-A Pimlico Blvd., will erect eight 2-story porch-front dwellings on Westwood Ave. near Payson St.; brick.

Md., Baltimore.—Walter Westphal, 1700 N. Bond St., has plans by W. H. Hogg, 3200 E. Fairmount Ave., Baltimore, for store and dwelling at 2210 W. Lexington St.; 2 stories; brick; 20x55 ft.; cost \$4000.

Md., Lauraville.—Dr. Henry B. Eggers, 852 W. North Ave., Baltimore, will erect residence on Alsia Ave., Alsia Terraces.

Md., Roland Park.—Jas. R. Edmunds, Jr., 114 W. Franklin St., Baltimore, will erect residence; brick and stucco; 32x36 ft.; slate roof; contractors estimating are: A. F. West, 15 E. Fayette St.; Gladfelter & Chambers, 2074 Woodberry Ave.; W. E. Hara Co., 213 N. Calvert St.; E. G. Turner, Bateman Ave.; J. Henry Smith, 1426 Light St., all of Baltimore.

Md., Mt. Washington.—Louis E. Melis, 400 S. Bond St., Baltimore, will erect dwelling at Hill Top Park; 2½ stories; shingle.

Miss., Sardis.—J. Q. West has plans by H. T. McGee, Memphis, Tenn., for 6-room bungalow.

Mo., Kansas City.—W. J. Neiswanger will erect dwelling at 3723 Washington St.; 2 stories; brick and stone; cost \$10,000.

Mo., Kansas City.—J. F. Meade, Asst. Cash., Southwest National Bank of Commerce, will expend \$15,000 to erect residence; tile roof; hot-water heat; construction spring of 1915. (Lately noted.)

Mo., St. Louis.—J. H. Williamson will erect 2-story dwelling at 5336 De Giverville St.; cost \$4000; construction by owner.

Mo., St. Louis.—Lewis Realty & Building Co. will erect four one-story dwellings at 48-49 Sacramento St.; cost \$7200.

Mo., St. Louis.—Leisner Realty Co. will erect two 2-story dwellings at 5335-44 Berlin St.; cost \$9000.

Mo., University, Sta. St. Louis.—E. Devine and Geo. J. Burke will erect two residences to cost \$15,000 each.

N. C., Winston-Salem.—T. V. Edmunds has plans by L. A. Bellonby, Charlotte, N. C., for 10 residences in West End; brick; 4 and 5-room bungalows and 2-story 7-room bungalows.

S. C., Darlington.—A. Sidnor has plans by H. W. Witcover, National Bank Bldg., Savannah, for frame dwelling to cost \$5000.

S. C., Fort Mill.—Methodist Church will erect parsonage; 2 stories; 7 rooms; cost \$3000; ordinary construction; shingle roof; plans and construction by Rev. D. H. Holloway, pastor, Fort Mill. (Lately noted.)

S. C., Greenville.—J. Robert Martin will erect dwelling on Pendleton St.; cost \$5000.

S. C., Greenville.—J. R. Smith has plans by Martin & Andrews, Greenville, for cottage on Earle St.

S. C., Greenville.—J. G. Milford will have plans prepared by H. O. Jones, Greenville, for colonial residence.

S. C., Honea Path.—A. M. Shirley has plans by Casey & Fant, Anderson, for dwelling; cost \$3500.

Tenn., Cornersville.—Shirley P. Jones, Route 1, Lewisburg, Tenn., will rebuild dwelling; 7 or 8 rooms; brick; asbestos shingle or slate roof; hot-water heat; electric lighting; lately reported burned. (See Machinery Wanted.)

Tenn., Memphis.—P. P. Van Vleet will erect residence at 275 N. Watkins St.; cost \$3200.

Tenn., Memphis.—F. C. Story will erect 2 residences at 20 and 51 Evergreen St.; cost \$4500 each.

Tenn., Memphis.—W. M. Johnson will erect residence at 1640 Peabody Ave.; cost \$6300.

Tenn., Memphis.—Jeff D. Nathan will erect residence at Linden Ave. and Bellevue Blvd.; cost \$6500.

Tenn., Memphis.—Roy Chambers has plans by H. T. McGee, Memphis, for residence at Greenlaw Ave. and Decatur St.; brick and stucco.

Tenn., Nashville.—J. Morgan Wilkerson will erect residence; 2 stories; brick; 10 rooms; cost \$7000.

Tenn., Park City, Sta. Knoxville.—Edgar Popsch has plans by John H. Ryno, Knoxville, to rebuild dwelling; 8 rooms; ordinary construction; asphalt shingle roof; hot-air, steam or hot-water heat; gas and electric lighting; cost \$3000; plans not complete. (Lately reported burned.)

Tex., Austin.—John McNamara will erect 2-story frame dwelling on 23d St.; cost \$3700.

Tex., El Paso.—Mayfield Building & Improvement Co. will erect brick residence at 2401 Montana St.; cost \$5800.

Tex., Fort Worth.—A. T. Voss will erect frame residence at 115 Galveston Ave.; cost \$3000.

Tex., Galveston.—Gus Kahn will erect 2-story frame and stucco dwelling at 13th St. and Ave. H.; cost \$5000.

Tex., Galveston.—Sam I. Miller will erect 2-story brick and tile dwelling; cost \$10,000.

Tex., Houston.—R. C. Nitze will erect 7-room residence on Austin St.; cost \$4500.

Tex., Houston.—John A. Deering will erect residence; 9 rooms; hollow tile; 2 stories; garage; cost \$5000.

Tex., Houston.—Russell-Brown Co. will erect 2-story stucco residence at Avondale & Mason Sts.; cost \$10,300.

Tex., Houston.—John B. Warren will erect 2-story 9-room residence; cost \$8000.

Tex., Houston.—F. J. DeMerritt will erect 7-story residence; cost \$4000.



Tex., Houston.—R. S. Sterling Investment Co. has plans by Geo. H. Freuhling, Houston, for several dwellings in Rossmayne addition; 6 to 10 rooms; mill construction; frame; shingle and tile roof; cost \$4000 to \$10,000; no bids. (Lately noted.)

Va., Berkley, Station Norfolk.—Sophie E. Hunter will erect triple brick residence; 2 stories; cost \$5900.

Va., Graham.—Ed Nash will erect store and dwelling. (See Stores.)

Va., Graham.—Wm. F. Raugh will erect 3 dwellings in West Graham.

Va., Norfolk.—F. A. Odenhal has plans by Harvey Abrams, 346 Arcade Bldg., Norfolk, for residence; brick; hot-air heat; tile bathroom floors; cost \$5000; bids opened July 14.

Va., Norfolk.—Miss M. J. Crookes has plans by Harvey Abrams, Norfolk, for residence; 25x32 ft.; mill construction; hot-water heat; slate roof; tiled bathroom; hardwood floors; chestnut and birch trimmings; asbestos shingles on sides; cobble stones in foundation and chimney; cost \$6000.

Va., Richmond.—Henry C. Riely will erect brick dwelling on Park Ave.; cost \$8200.

Va., Richmond.—L. D. Cutchen will erect store and dwelling. (See Stores.)

Va., Richmond.—M. W. Lawrence will erect 2-story brick dwelling on Floyd Ave.; cost \$5000.

Va., Roanoke.—M. L. Nininger, 405-13th Ave. S. W., has plans by Mitchell & Davis, Roanoke, for dwelling; 13x36 ft.; brick cased; slate roof; vapor heat; electric lighting; T. T. Fariss, foreman, Roanoke. (Lately noted.)

W. Va., Charleston.—Geo. S. Laidley will erect 2 dwellings on Piedmont Rd.; cost \$3000.

W. Va., Huntington.—W. R. Jackson will erect 8-room brick residence on 11th Ave.; cost \$3000.

W. Va., Parkersburg.—Crawford Home Building Co., Citizens' National Bank Bldg., will erect 30 bungalows. (Welles Crawford lately noted to erect three 5-room dwellings.)

## GOVERNMENT AND STATE

Ky., Jackson.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., Washington, D. C., will receive supplemental bids to erect postoffice building; 3 stories and basement; 5000 sq. ft. ground area; stone, ornamental terra-cotta and brick; composition and slate roof. (Lately noted.)

N. C., Rocky Mount.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., Washington, D. C., will receive supplemental bids for construction of postoffice; 2 stories and basement; 4700 sq. ft. ground area; stone and brick facing; composition roof. (Lately noted.)

## HOTELS

Ala., Hartsboro.—B. Goldstein will add third story to Richards Hotel, increasing to 23 rooms; plans by Okel & Cooper, Vandiver Bldg., Montgomery, Ala.

Ala., Piedmont.—C. H. Thompson is reported to erect hotel; cost, including site, \$20,000.

Ark., Ashdown.—Dr. A. B. Bishop and C. A. Bishop have plans by Mr. Van Dyke, DeQueen, Ark., for hotel; 50x50 ft.; fireproof; electric lighting; cost \$10,000; bids opened July 16. (Lately noted.)

Fla., Bristol.—Mrs. F. E. Prather contemplates rebuilding Bristol Hotel. (Lately noted burned.)

Ga., Atlanta.—Hotel Winecoff will expend \$10,000 for improvements; remodel interior, construct roof garden, etc.

Ga., Atlanta.—Piedmont Hotel will expend \$5000 for alterations; day labor.

Ky., Whitley City.—F. D. Sampson of Bankston & Sampson is interested in organization of company to erect hotel; electric lights; steam heat; telephones, etc.

Miss., Biloxi.—J. W. Apperson will probably remodel Montrose Hotel in October; provide total of 100 rooms; 3 stories; frame construction; steam heat; electric lighting; elevator; cost \$25,000. (Previously noted.)

Okl., Tulsa.—Dan Hunt has plans by E. Eichenfeld, Tulsa, for hotel; 50x140 ft.; 3 stories, with basement 50x152 ft.; brick, steel and frame; gravel roof; hot-air heat; electric and gas lights; glass sidewalk lights; elevator; cost \$27,000; contract let about July 25.

Tex., Beeville.—Beeville Hotel Co., Dr. E. P. Coyo, Secy., authorized Stephenson & Heidenfels, Archts., to advertise for bids to be received until Sept. 1 to erect Kohler Hotel; 5 stories; 75x130 ft.; fireproof; gravel roof; electric lights; concrete and brick sidewalks; freight and passenger elevators;

construction to permit later enlargement; cost \$45,000 without mechanical equipment. (Lately noted.)

Tex., Dallas.—Murphy & Bolanz are having tentative plans prepared for hotel on Akard St. near Young St. (Lately reported.)

## MISCELLANEOUS

Ala., Tuscaloosa.—Clubhouse.—R. P. Prowell will erect country club, etc. (See Land Developments.)

Ark., Newport.—Fair.—Directors of Jackson County Fair acquired 40-acre site for permanent fair; purchased 75,000 ft. of lumber for fencing, grandstands, etc.; construct racetrack.

D. C., Washington.—Stable.—W. F. Nash has plans by T. M. Medford, 1631 3d St. N. W., Washington, for stable; cost \$7000; construction by owner.

D. C., Washington.—Armory.—C. L. Harding, Woodward Bldg., Washington, prepared plans for alterations to old National Rifles Armory at 918 G St.; 3 stories and basement; brick; will construct front with plate-glass show windows on ground floor for stores, platform in hall, etc.

Fla., Bramlet, P. O. Tampa.—Hall.—Farmers' Union plans to erect building for hall, etc. (See Stores.)

Fla., St. Augustine.—Hospital.—Florida East Coast Ry., J. P. Beckwith, V. P., will improve and enlarge hospital; remove operating-room and sun parlor to another location, erect 3-story addition, etc.

Ga., Atlanta.—Fair.—Chamber of Commerce, Council and County Comms. are reported promoting establishment of Southeastern Fair at Lakewood; initial expenditure \$225,000.

La., New Orleans.—Convent.—Convent of Perpetual Adoration will expend \$5000 for additions and repairs to building.

Md., Baltimore.—Parish-house.—St. John's P. E. Church, Rev. W. D. Morgan, rector, 1 Old York Rd., will erect parish-house at Greenmount and Old York Rd.; slate roof; hardwood interior. Contractors estimating are: W. E. Harn Co., 213 N. Calvert St.; J. J. Walsh & Sons, 1533 Maryland Ave.; G. Walter Towell, Eutaw and Dolphin Sts.; B. F. Bennett Building Co., 123 S. Howard St.; Cowan Building Co., 106 W. Madison St.; John Hiltz & Sons, 3 Clay St.; D. M. Andrew Co., Mt. Vernon Ave. and 26th St., all of Baltimore; W. N. Horn, Archt. (Lately noted.)

Miss., Natchez.—Pavilion, etc.—A. G. Hootsell, Chrmn., will erect dancing pavilion 60x100 ft., band stand 20x20 ft., and cloak-room 10x20 ft., at Middle Bluff; bids received until July 8.

Okl., Chickasha.—Hospital.—Drs. W. H. Livermore and S. D. Downey are having plans prepared by T. J. Gallbrith, Chickasha, for hospital at 10th St. and Kansas Ave.; 2 stories and half basement; tapestry brick; concrete base; white stone trimmings; hot water heat; hot and cold water system; cost about \$10,000.

S. C., Sumter.—Stable.—W. B. Boyle & Co. will erect brick stables, vehicle-house and storerooms.

Tex., El Paso.—Home.—House of the Good Shepherd will establish institution; will erect buildings at initial cost of \$40,000.

Tex., Temple.—Hospital.—Santa Fe Ry. Employees Hospital Assn. is considering erection of wing to general hospital for Gulf system.

## RAILWAY STATIONS, SHEDS, ETC.

Ark., Forrest City.—St. Louis, Iron Mountain & Southern R. R., J. R. Stephens, Ch. Engr., St. Louis, and Chicago, Rock Island & Pacific Ry., C. A. Morse, Ch. Engr., Chicago, are reported to erect station.

D. C., Washington.—Washington Ry. & Electric Co., 14th and E. Capitol Sts., will expend \$3000 to repair car barn at 10th St. and Florida Ave. N. W.

Fla., Baldwin.—Seaboard Air Line Ry., W. D. Faucette, Ch. Engr., Norfolk, Va., will erect passenger station, with waiting-rooms, ticket offices, umbrella sheds, etc.

Ga., Macon.—Macon Terminal Co. is having plans prepared by Fellheimer & Long, 7 E. 42d St., New York, for terminal station; cost \$750,000 to \$1,000,000. (Lately noted.)

N. C., Warsaw.—Atlantic Coast Line Ry., E. B. Pleasants, Ch. Engr., Wilmington, N. C., and Carolina R. R., C. I. Millard, Prest., Norfolk, Va., is reported to erect union station and baggage department; will provide freight warehouse with 85 additional ft. of space and 80 additional ft. of trackage.

N. C., Wilson.—Atlantic Coast Line R. R., E. B. Pleasants, Ch. Engr., Wilmington, will

erect covered cotton platform and provide yards; platform, 325x100 ft., equipped with sidetrack along entire length and driveway 30 ft. wide.

S. C., Charleston.—Carolina, Atlantic & Western Ry., W. R. Bonsal, Prest., Hamlet, N. C., is reported planning to erect terminal freight station.

## SCHOOLS

Ala., Birmingham.—Board of Education will expend \$12,000 to repair schools.

Ala., Huntsville.—Board of Education, W. T. Hutchens, Prest., will erect high school; 80x170 ft.; semi-fireproof; probably slate roof; steam heat; gas and electric lighting; may install elevator; cost \$30,000; architect not selected; lately noted planning \$30,000 bond issue. (See Machinery Wanted.)

Ala., Phenix City.—City rejected all bids to erect school; receives new bids until July 22; 2 stories; 8 rooms; F. Roy Duncan, Archt., Columbus, Ga. (Lately noted.)

Ala., Yolande.—Yolande Coal & Coke Co. is reported to erect 4 or 5-room school, to cost about \$3000. (See Coal Mines and Coke Ovens.)

Ark., Conway.—Central College will erect 3-story annex to main building; to provide accommodations for 50 additional students.

D. C., Washington.—Sisters of Divine Providence are reported to have plans by Murphy & Olmstead, 1413 H St. N. W., Washington, for Sisters' College to cost ultimately \$1,500,000 and to consist of academic buildings and community residences; plans call for refectories, school of domestic science, service buildings, electric power-house, stables, 200,000 chapel, etc.; Italian Renaissance and Spanish mission types; proposed construction of hollow tile or brick with ed having plans prepared by Stem & Fell-dents.

Fla., Cedar Key.—Cedar Key School Dist. voted \$15,000 bonds to erect 6-room fireproof school; Thos. W. Price, Supt. Board of Public Instruction, Bronson, Fla. (Lately noted.)

Fla., Elfers.—Pasco County School Board, Dade City, Fla., has plans by W. R. Biggers, Tampa, for schools at Elfers and Richland, Fla.; latter 5 rooms and auditorium; red brick; buff trimmings; tar and gravel roof; gas lighting; former 5 classrooms; exterior walls of brick; wood interior finish; bids received until July 20.

Fla., Ocala.—Bids received by Board of Public Instruction of Marion County, through J. H. Brinson, Secy., until July 14 to erect additions to primary school, 4-room brick school in North Ocala, wooden school to replace Howard Academy; Melver & MacKay, Archts., Ocala. (Previously noted to have rejected bids to erect school.)

Fla., Palatka.—City is considering \$100,000 bond issue to erect five schools as follows: Primary, grammar and high school in Palatka to cost \$80,000; 3 schools in East Palatka; cost, respectively, \$13,000, \$5000 and \$1000; school in Palatka Heights; cost \$1000.

Ga., Atlanta.—Oglethorpe University Trustees selected Morgan & Dillon and W. T. Downing, all of Atlanta, to prepare plans for university plant reported; Morgan & Dillon advise not in position to give information; cost about \$1,000,000. (Previously noted.)

Ga., Canton.—City opens bids Aug. 1 to erect school; ordinary construction; steam or furnace heat; electric lighting; cost \$22,000; C. W. Carlton, Archt., Lagrange, Ga. (Lately noted voting bonds.)

Ga., City View, P. O. at Columbus.—City voted on \$8000 bonds for school. Address School Trustees.

Ga., Cordele.—City selected site for proposed school on Northern Heights; Fred Harder, Mayor.

Ga., Jesup.—Jesup School Dist. is reported to vote on bonds for schools. Address Dist. School Trustees.

Ga., Lyerly.—Lyerly and Summerville School Dist. sold bonds to erect schools. Address Dist. School Trustees.

Ga., Summerville.—Summerville and Lyerly School Dist. sold bonds to erect schools. Address Dist. School Trustees.

Ky., Blackey.—Stuart-Robinson Mission School, Rev. Edw. O. Guerrant in charge, will erect boys' dormitory to cost \$5000 in addition to girls' dormitory now under construction.

Ky., Covington.—City is reported considering erecting \$150,000 high school. Address The Mayor.

Ky., Cynthia.—City defeated school bond issue; Josephus Martin, Secy. Board of Education. (Previously noted.)

Ky., Hickman.—City will erect \$3000 brick school; voted bonds. Address The Mayor.

Ky., Louisville.—Saml. D. Jones, Business Director, Board of Education, receives bids until July 20 to erect school at 25th and A Sts.; Ward & Glossup, Archts., Louisville; also at same time for installation of heating and ventilating system for school, 25th, A, Cypress and Hill Sts.; new boiler-house and installation of heating and ventilating system at Grayson Street School; alterations to building and plumbing at Parkland School; J. Earl Henry, heating and ventilating engineer, Louisville; plans and specifications on application. Board of Education acquired building at 517 S. 6th St. and will remodel for graded school; is having plans prepared by J. Earl Henry, Louisville, for West Market St. school; 8 rooms; fireproof; composition roof; fan system of heating; open bids in 3 or 4 months; rescinded contract lately noted let for plumbing Wheatley School and will advertise for new bids.

Ky., Pikeville.—City and Pike County Boards of Education let contract July 21 to erect school; 80x140 ft.; ordinary construction; fan blast system of heating; cost \$45,000; Weber, Werner & Adkins, Archts., Cincinnati. (Pike county lately noted to erect \$35,000 school building.)

Ky., Slaughtererville.—Slaughtererville School Dist. is reported to have voted \$4500 to erect building. Address Dist. School Trustees.

Ky., Winchester.—Board of Education, W. O. Parish, Secy., petitioned City Council to issue \$100,000 bonds to erect school buildings, etc.

La., Choupique.—Calcasieu Parish School Board, Lake Charles, La., will erect school.

La., Lake Charles.—Calcasieu Parish School Board will erect 2 school buildings; at Blair School and at Choupique, La.; latter frame construction; 3 rooms; cost \$3500.

La., New Orleans.—School Board is having plans prepared by E. A. Christy, New Orleans, for McDonough School No. 9; cost about \$150,000. (Previously noted.)

La., Vivian.—Caddo Parish School Board, Dist. No. 3, will soon let contract to erect school; Edw. F. Neild, Archt., Shreveport, La., from whom information is obtainable. (Lately noted to cost \$40,000 to \$50,000.)

Md., Cumberland.—Allegany County School Comms. acquired site for proposed North Cumberland school; 2 stories; 8 rooms; brick; provision for 4 additional rooms.

Md., Ocean City.—Maryland State Teachers' Association has plans by Theodore Wells Pietsch, American Bldg., Baltimore, Md., for school; 3 stories; brick; concrete foundation; slate roof; steam heat; electric lights; contractors estimating are: H. B. Pichard, Pocomoke City, Md.; D. Cord-dry, Snow Hill, Md.; John Humphreys, Berlin, Md.; J. Mitchell, Salisbury, Md.; Lemuel Wyatt, Ocean City, Md.; Pressy & Allen, Princess Anne, Md.

Miss., Edwards.—Southern Christian Institute will erect temporary building on basement walls of structure lately reported burned; 2 stories; frame construction.

Miss., Hattiesburg.—Forrest County Comms. authorized \$15,000 bond issue for schools.

Miss., Hattiesburg.—Eatonville School Dist. will issue \$5000 bonds to erect brick school. Address Dist. School Trustees.

Miss., McLaurin.—McLaurin School Dist. Trustees plan to erect \$20,000 school.

Mo., Cameron.—Cameron School Dist. has plans by Rose & Peterson, Kansas City, Mo., to erect school, for which \$55,000 bonds were voted. Address Dist. School Trustees. (Lately noted.)

Mo., Carterville.—Board of Education will soon begin construction of proposed ward school for which \$12,000 bonds were voted.

Mo., Hughesville.—Consolidated School Dist. No. 2 votes July 21 on \$5000 bonds to erect central school north of Hughesville. Address Dist. School Trustees.

Okl., Alva.—Board of Education will erect \$5400 high-school building; will probably issue bonds.

Okl., Bartlesville.—Board of Education receives bids until July 31 to erect 8-room-and-basement ward school; bids received with or without heating and plumbing; plans and specifications at office of McIlheny & Thurman, Johnstone Bldg., and Walton Everman, Archt., both of Bartlesville.

Okl., Hewitt.—New Wilson School Dist. voted \$10,000 bonds to erect school. Address Dist. School Trustees. (Lately noted under Okla., Wilson.)

Okl., Kiersey.—Board of Directors will erect school; 2 stories; brick; plans on file at office of Jewell Hicks, Durant; bids opened July 15.

S. C., Walhalla.—Providence School Dist. No. 3 votes July 18 on tax for schools; Jas. Bates, R. A. Reeves and B. C. Brock, trustees

S. C., Cheraw.—School Trustees, R. T. Caston, Chrmn., has plans by W. J. Wilkins & Co., Florence, S. C., for addition to school; bids received by architects until July 13.

S. C., Ridgeland.—School Trustees are considering election on \$10,000 bonds to erect school building.

Tenn., Decatur.—Meigs County Commrs. will levy tax to erect central high school.

Tenn., Knoxville.—Knox County Commrs. ordered election on \$100,000 bonds for schools, to include, in part: 10-room grammar school at Beaumont, to cost \$15,000; fireproof; slate roof; steam heat to cost \$4000; electric lighting to cost \$300; L. C. Waters, Archt., Knoxville; similar building at Camp Grove; Mr. Waters, Archt.; \$5000 schools at Smith Grove, Barber & Son, Archts., Knoxville; and Powell Station, Baumann Bros., Archts., Knoxville; \$33,000 school on Glenwood Ave., Knoxville; \$6000 addition to Park school; \$2900 improvements at Lonsdale and 1000 at Mountainview; also erect 10-room school near Brookside Cotton Mill. (Lately noted.)

Tenn., Lafayette.—Macon county will erect high school; J. B. Archer, D. E. Simmons, J. D. L. Blankenship and others, High School Board.

Tenn., Maryville.—Blount County Commrs. will issue \$40,000 bonds for county schools.

Tenn., Memphis.—City plans to rebuild Prescott school. Address The Mayor.

Tenn., Memphis.—National Negro Baptist Convention will erect buildings for Negro Baptist Theological Seminary; cost \$75,000 to \$100,000; Rev. C. J. Searcy, pastor, Metropolitan Church, Memphis, is interested.

Tenn., Nashville.—J. O. McClurkin and others have plans by Chas. A. Ferguson, Nashville, for boys' and girls' dormitories for Trevecca College; ordinary construction; electric lighting; cost \$6000.

Tenn., Nashville.—Davidson County Commissioners are reported to erect 5 high schools; will levy tax.

Tenn., Powell Station.—Knox County Commrs., Knoxville, Tenn., will erect \$5000 school. (See Tenn., Knoxville.)

Tex., Afton.—School Board of Afton Ind. School Dist. receives bids until July 18 to erect schools; plans and specifications at office of W. J. Holloway, Roaring Springs, Tex.

Tex., Brunner (not a postoffice).—Bids received until July 18 at office of Spinner-Hay Lumber Co., Houston, until July 18 to erect tile and concrete school; plans and specifications at above office; communications addressed to R. E. Watters, Supt. Brunner Ind. Schools, 108½ Main St., Houston.

Tex., Dallas.—Western Heights Independent School Dist. will erect school; 12 rooms and auditorium; ordinary construction; tar and gravel roof; cost \$14,000; C. H. Leimbach, Archt., 1105 S. W. Bldg., Dallas; bids opened July 15. Address Carl Thorne, Station A, Dallas. (Lately noted.)

Tex., Fort Worth.—School Board will expend \$6000 to improve Sam Houston and Travis schools.

Tex., Galveston.—Kinkhead School Dist. trustees plan to issue \$12,000 bonds; erect school.

Tex., Harrisburg.—L. L. Pugh, County School Supt., Houston, receives bids until July 18 to erect school in Magnolia Park; 6 rooms; brick; plans and specifications at office of F. S. Glover & Son, Archts., Blinz Bldg., Houston. (Lately noted.)

Tex., Houston.—L. L. Pugh, County School Supt., receives bids until July 18 to erect 2 two-room schools in Dist. 25; plans and specifications at office of F. S. Glover & Son, Archts., Blinz Bldg., Houston.

Tex., Mexia.—School Board will erect ward school to accommodate 300 children and cost \$10,000; brick construction; will vote on bond issue for same.

Tex., Rockdale.—City will erect \$25,000 school. Address School Board.

Tex., Roston.—Independent School Dist. voted \$12,000 bond issue to erect school; address School Trustees.

Tex., Waco.—J. C. Lattimore, Secy. of School Trustees, receives bids until July 18 to erect 3-story-and-basement addition to high school, including heating, lighting and plumbing; plans and specifications at office of Milton W. Scott & Co., Archts., 412½ Franklin St., Waco.

Va., Loud.—School Trustees have plans by C. B. Kearfott, Bristol, Tenn., for school; 6 rooms and auditorium; cost \$9000; ordinary mill construction; furnace heat to cost \$6000; open bids in about 2 weeks; address proposals to P. E. Wolfe, Glade Springs, Va. (Lately noted at Va., Glade Springs.)

Va., Petersburg.—Virginia Normal and Industrial Institute, Jno. D. Watkins, Secy.

Exec. Com., Law Bldg., receives bids until July 23 to erect dormitory building; plans and specifications at office of Richard A. Munden, Archt., 303 Mechanics' Bldg., Sycamore St., Petersburg.

Va., Richmond.—Rev. H. J. McKeefrey will erect proposed St. Patrick's School for Girls; brick; cost \$19,421.

W. Va., Fairmont.—State Board of Control purchased site for proposed State Normal School.

W. Va., Keyser.—State Board of Control, J. S. Lakin, Prest., Charleston, W. Va., will expend \$35,000 to erect dormitory at Preparatory Branch of West Virginia University; 228x50 ft.; fireproof; slate roof; steam heat; gas and electric lighting; H. Rus Warne, Archt., Charleston. (Lately noted to receive bids until Aug. 1.)

W. Va., Morgantown.—Board of Education of Union Dist., Monongalia county, will let contract July 18 to erect brick school at Oak Grove; 80x150 ft.; fireproof; cost \$100,000; C. W. Bates, Archt., Wheeling, W. Va.; date of opening bids not set; plans and specifications at office County Supt., Morgantown; J. G. Bowers, Secy., R. F. D. No. 10, Cheat Haven, Pa.

W. Va., Simpson.—Board of Education, W. M. Feltner, Secy., Grafton, W. Va., Route No. 8, invites architects to submit plans and specifications for school; cost \$4500. (Lately noted.)

W. Va., South Charleston.—Bids received by Board of Education of Loudon Dist. until July 15 to erect school; plans and specifications at office of B. H. Webb, Prest., and Hugh DeBoard, Archt., Charleston; R. J. McComack, Secy., Marmet, W. Va.

W. Va., Shirley.—Board of Education of McElroy Dist. receives bids until July 25 to erect 4-room school; plans and specifications at office of T. M. Talkington, Secy. of Board, and office of County Supt., Middlebourne, W. Va.

W. Va., Warwood.—Richland Dist. Board of Education is considering plans for school.

## STORES

Ala., Alabama City.—D. D. Erwin will erect brick store building.

Ala., Birmingham.—Mrs. H. E. Hewitt, 905 S. 30th St., will expend \$6000 to erect store building; 60x100 ft.; ordinary construction; Barrett's roofing; Miller & Martin, Archts., Title Bldg., Birmingham. (Lately reported to cost \$20,000.)

Ala., Birmingham.—Morris Real Estate Co. is reported to alter and rebuild burned structure occupied by Meyer-Marx Liquor Co.

Ala., Birmingham.—Maj. Milner is reported to remodel burned building occupied by Barbour Plumbing, Heating & Electric Co.

Ala., Florence.—Young estate will rebuild store building, lately noted burned; cost \$70,000.

Ala., Northport.—Mrs. Mattie Shirley will erect 3 stores to replace structure previously noted burned.

Ala., Tuscaloosa.—G. W. Van Hoose will erect store; 2 stories and basement; brick.

Ala., Tusculumbia.—Kirk & Isbell will rebuild store and office building reported burned; 50x100 ft.; 2 stories; fireproof; probably metal roof; heating and lighting not determined; cost \$10,000.

Ark., Pocahontas.—J. W. Price will erect building to replace burned structure.

Ark., Pocahontas.—L. C. Haynes will erect building to replace structure lately burned.

Ark., Pocahontas.—N. A. Childs will erect building to replace burned structure.

D. C., Washington.—C. L. Harding, Woodward Bldg., Washington, prepared plans for alterations to building at 918 G St. for stores, etc. (See Miscellaneous.)

Fla., Bramlet, P. O. Tampa.—Farmers' Union plans to erect \$5000 combination store, warehouse, packing-house and hall; about 40x135 ft.

Fla., Carrabelle.—C. M. Tanner will erect two store buildings.

Fla., Daytona.—Bingham & Thompson will erect building on S. Beach St.; 2 stories; brick.

Fla., Jacksonville.—W. A. Macduff will expend \$30,000 (cost without mechanical equipment) to erect business block; 45x30 ft.; 6 stories; fireproof; asphalt roof; electric lighting; W. B. Camp, Archt., Board of Trade Bldg., Jacksonville; bids opened July 15. (Lately noted.)

Fla., Kissimmee.—R. D. Waring is having plans prepared by R. H. Kudin, Kissimmee, for building on Broadway; 2 stories; 50x70 ft.; lower floor for stores; upper floors, offices; Oriental style; brick; Indiana limestone trimmings.

Fla., St. Augustine.—W. J. Sanchez will erect business building at Hospital St. and Nunnery La.

Fla., Valrico.—Valrico Townsite Co. will erect two-story building.

Fla., Winter Haven.—John Thornhill will erect 1-story brick building.

Ga., Atlanta.—Harry G. Poole will erect building to be occupied by Rice-Hutchens Co. of Boston, Mass.; 4 stories and basement; mill construction; site 45x140 ft.

Ga., Atlanta.—Brown & Allen will expend about \$15,000 to install finishing, fixtures and soda fount in building at Whitehall and Alabama Sts. for drug store; day labor.

Ga., Atlanta.—Ben J. Massell will erect brick business building at 447 Peachtree St.; cost \$4000.

Ga., Broxton.—C. A. Poer will rebuild store occupied by E. L. Bledsoe; 175x65 ft.; 3 stories; fireproof; metal roof; bids opened. (Lately reported burned.)

Ga., Broxton.—R. R. Purkins, Bay St. Louis, Miss., will rebuild store occupied by W. M. Rainbow; fireproof; tin roof; bids opened. (Lately noted burned.)

La., New Orleans.—Emile Weil, Archt., New Orleans, is reported to receive estimates for alterations to store to be occupied by T. Hausman & Sons.

La., New Orleans.—Frank L. Simons will erect 3 stores on Camp St., remodel building adjoining present structure on Howard Ave. to enlarge store and provide warehouse.

La., New Orleans.—Twitchell estate will erect 2-story brick building at 743 St. Charles St.; cost \$14,000.

Md., Baltimore.—Lee E. Hartman & Co., 12 St. Paul St., is receiving bids to erect one-story store at Park Heights and Shirley Aves.; contractors estimating are Blake & Engle, Law Bldg.; Fidelity Construction Co., Knickerbocker Bldg.; John S. Busick, 2811 Raynor Ave.; Monmonier & Sorrell, 1711 McCulloh St.; Wm. H. Porter & Son, 507 Forest St., all of Baltimore.

Md., Baltimore.—Walter Westphal has plans for store and dwelling. (See Dwellings.)

N. C., Durham.—A. E. Lloyd & Co. will erect building on W. Main St.; 2 stories and basement; 40x100 ft.; slag roof; prism glass and concrete sidewalks; H. C. Lanthicum, Archt., Durham, N. C.

N. C., Raleigh.—Frank K. Thompson, Raleigh, is reported preparing plans to erect building at Hillsboro St. and Glenwood Ave.; 2 stories and basement; pressed brick with stone trimmings; cost about \$16,000; contract let in about 2 weeks.

N. C., Salisbury.—Salisbury Hardware & Furniture Co. will erect 2 or 3-story business block.

N. C., Salisbury.—V. Wallace & Sons will erect 3-story business building on Main St.

Okla., Hattonville (not a P. O.).—T. L. Robertson, Miami, Okla., is reported to erect two 2-story and three 1-story business buildings; brick; foundations completed.

Okla., Oklahoma City.—Sidney L. Brock, 213 W. Main St., is reported to have leased Kress building and to remodel for occupancy by Brock Dry Goods Co.; will provide 250-ft. glass frontage, 58,000 sq. ft. floor space, etc.

Okla., Tulsa.—U. R. Evans is reported to erect 3-story brick building.

Okla., Tulsa.—A. F. Ault has plans by Geo. Winkler, Tulsa, for store building; 40x134 ft.; ordinary construction; tar and gravel roof; cost \$25,000; date of letting contract not definite.

S. C., Aiken.—J. T. Shuler will erect 7 storerooms on Laurens St.

S. C., Bennettsville.—A. J. Matheson is erecting arcade; marble finish terrazzo floors; cost \$20,000.

S. C., Honea Path.—Dr. J. F. Shirley has plans by Casey & Fant, Anderson, S. C., for store and moving-picture theater; cost \$6000; day labor.

S. C., Honea Path.—Dr. J. F. Shirley has plans for theater and store building. (See Stores.)

S. C., Greenville.—Razor, Mills & Williams will expend \$3000 to remodel store building; 50x100 ft.; stucco on brick; tin roof; Martin & Andrews, Archts., Greenville. (Lately noted.)

S. C., Gray Court.—Abercrombie & Owings will erect business building adjoining present structure.

S. C., Sumter.—W. B. Boyle & Co. will erect storerooms, etc. (See Miscellaneous.)

Tenn., Nashville.—Jas. G. Cantrell will remodel building at 210 5th Ave. for company to be organized by Verner Tolmie and Joe Holman; also remodel building adjoining for

Geny Bros.; fronts of glazed terra-cotta and iron; walls to be wainscoted with white Italian marble; mirrors with mahogany cornices and trimmings; decorated ceiling of ornamental plaster; indirect lighting system; cost about \$20,000.

Tex., El Paso.—E. Carlson will erect brick store building in Woodlawn addition; cost \$4000.

Tex., Dallas.—Lee & Lee will erect 2-story-and-basement brick store building at 1707-09 Live Oak St.; cost \$24,300.

Tex., Dallas.—Mrs. Esther Murphy will erect 2-story brick store at 2704-06 S. Ervay St.; cost \$9175.

Tex., Houston.—Murray B. Jones will erect brick store at Dallas and Main Sts.; cost \$12,500.

Tex., Texarkana.—Buhrman-Farr Hardware Co. will erect store building at 3d and Laurel Sts.; 3 stories; brick; cost \$25,000.

Va., Graham.—Ed Nash will erect building; brick and stone; 30x60 ft.; lower floor for stores; upper floor for dwelling.

Va., Fishersville.—I. Q. Simmons will rebuild store; plans not decided. (Lately reported burned.)

Va., Norfolk.—J. Haskell will erect addition to building; fireproof; shipping-room, concrete floor; outer walls of old building veneered and supported above by iron girders; marble base; tile, prism and plate-glass front; cost \$4800; Harvey Abrams, Archt., 346 Arcade Bldg., Norfolk; bids opened July 14.

Va., Norfolk.—Retail Merchants Corp. has plans by James W. Lee, Norfolk, to erect building to contain 3 stores, each 20x100 ft.; 1 story, with mezzanine floor; bids opened July 14.

Va., Richmond.—T. S. Southgate and J. H. Cofer will erect 2 stores on Granby St.

Va., Stuart.—Mountain Home Lodge, A. F. & A. M., will erect three-story lodge and business building.

Va., Richmond.—L. D. Cutchen will erect 2-story brick store and dwelling on Main St.; cost \$5000.

W. Va., Charleston.—Charleston Electric Supply Co. will erect store and office building on Kanawha St.; 3 stories; brick.

W. Va., Charleston.—Glendale Lodge No. 78, Knights of Pythias, will erect store, office and lodge building. (See Association and Fraternal.)

W. Va., Charleston.—Mrs. A. Borarsky will expend \$50,000 (cost without mechanical equipment) to erect store and office building; fireproof; contract let July 15. (Lately noted.)

## THEATERS

Ark., Little Rock.—Chas. T. Abeles has plans by Chas. T. Abeles & Co., Little Rock, for moving-picture theater; 50x140 ft.; fireproof; cost \$35,000. (Lately noted.)

Fla., De Land.—Mrs. J. C. Perkins is reported to have purchased site on Boulevard, 32x99 ft., to erect motion picture theater.

Md., Baltimore.—Garden Co., 210 W. Lexington St., is having plans prepared by Thomas W. Lamb, 244 5th Ave., New York, for theater; 165x120 ft.; fireproof; brick, terra-cotta and concrete; metal columns; tile and marble decorations; slag roof; two elevators; cost \$150,000. Contractors estimating are: Singer-Pentz Co., 600 Equitable Bldg.; J. Henry Miller, Inc., Eutaw and German Sts.; Wm. Ferguson & Bro., 214 Clay St.; Consolidated Engineering Co., Gunther Bldg.; Morrow Bros., Fidelity Bldg.; Irwin & Leighton, Keyser Bldg., all of Baltimore; Cramp & Co., Danckla Bldg.; A. Raymond Raff, 1635 Thompson St., both of Philadelphia; Fleischmann & Bro., New York; bids due July 28. (Lately noted.)

Mo., St. Louis.—Mound City Photoplay Co. is reported to have plans by Haussler & Huff, Roe Bldg., St. Louis, for theater and office building at 117 N. 6th St.; cost about \$40,000.

S. C., Greenwood.—Crescent Co. will erect motion-picture theater. (See Machinery Wanted.)

## WAREHOUSES

Fla., Bramlet, P. O. Tampa.—Farmers' Union plans to erect combination warehouse, etc. (See Stores.)

Ky., Louisville.—Axton-Fisher Tobacco Co. will erect warehouse on 20th St.; 5 stories; steel and concrete; cost about \$50,000.

La., New Orleans.—Frank L. Simons will remodel building to enlarge store and provide warehouse. (See Stores.)

S. C., Aiken.—Powell Hardware Co. will erect warehouse; 130x30 ft.; also erect 2-story addition to present structure; cost \$5000.



Tenn., Nashville.—Nashville Tobacco Works will expend \$4000 to remodel warehouse at 10th Ave. and Union St.

Tex., San Marcos.—S. R. Kane has plans by J. P. Caldwell, San Marcos, to erect building for carriages; 52x120 ft.; ordinary

construction; metal roof; stoves; electric lighting; cost \$8000. (Lately noted burned.)

Tex., Houston.—Houston Lighting & Power Co. will erect storehouse and garage near plant at Gable St. and the bayou; cost \$11,000.

## BUILDING CONTRACTS AWARDED

### APARTMENT-HOUSES

Ga., Atlanta.—Dr. W. E. Lambright let contract to F. E. Mackie, Atlanta, to erect 2-story brick apartment-house at 475 N. Boulevard; cost \$30,000; A. N. Canton, Archt., Atlanta.

Ga., Augusta.—Mrs. Juanita Morgan let contract to E. L. Crooks, Augusta, to erect apartment-house and store; 45x90 ft.; 3 stories; brick; limestone and granite trimmings; iron and steel; plate-glass front; tin roof; cost \$25,000; G. Lloyd Preacher, Archt., Dyer Bldg., Augusta. (Lately noted.)

Mo., St. Louis.—Mrs. M. Perry let contract to N. Howard, St. Louis, to erect tenement at 3527 Clay St.; 2 stories; cost \$5000.

Mo., St. Louis.—W. E. Mantz let contract to Theo. Ratz, St. Louis, to erect tenement at 4000 De Tonty St.; 3 stories; cost \$13,000.

Mo., St. Louis.—Arma Shea let contract to E. Hook, St. Louis, to erect 2-story tenement-house at 4016-18 Castleman St.; cost \$5600.

Mo., St. Louis.—Belle H. Reeves let contract to W. Shasserre, St. Louis, to erect 2-story tenement-house; cost \$3600.

Mo., St. Louis.—Louisa Hearmeling let contract to H. Hemminghaus, St. Louis, to erect 2-story tenement-house at 4456 Margaretta St.; cost \$5400.

Mo., St. Louis.—Alphonse Naert let contract to A. Degehardt, St. Louis, to erect 2-story tenement-house at 5212 Louisiana St.; cost \$3400.

Mo., St. Louis.—H. A. Piterod let contract to L. Kopp, St. Louis, to erect 2-story tenement-house at 3870 Wyoming St.; cost \$4500.

Mo., St. Louis.—G. W. Chadsey let contract to W. P. Mounts, St. Louis, to erect addition to tenement-house at 5885 Von Versen Ave.; cost \$5000.

Mo., St. Louis.—Mary Byron let contract to E. Zeppenfeld, St. Louis, to erect 2-story tenement-house at 2231 Mary St.; cost \$3000.

Mo., St. Louis.—Thos. Liddle let contract to Haller-Lambrecht Realty Co., St. Louis, to erect apartment-house on Junata St.

Mo., St. Louis.—W. Harrison let contract to F. Arnold, St. Louis, to erect 2-story tenement-house at 1091-93 S. Taylor St.; cost \$5000.

Mo., St. Louis.—R. Perkins let contract to A. Aufderheide, St. Louis, to erect 2-story tenement-house at 1901-03 John St.; cost \$5000.

Mo., St. Louis.—J. A. Life let contract to H. Schmidt, St. Louis, to erect 2-story tenement-house at 4223 Peck St.; cost \$4000.

Mo., St. Louis.—J. Moriarity let contract to G. E. Neff, St. Louis, to erect 2-story tenement-house at 5853 Washington St.; cost \$4700.

Tenn., Knoxville.—C. B. Atkins, Prest. of Home Building Co., will erect apartment-house at 1111 Ave. and Walnut St.; brick; cost \$12,000; Worsham Bros., contractors, Knoxville.

Tenn., Memphis.—A. L. Gardner, 96 S. Front St., let contract to R. A. Harris & Son, Builders' Exchange, Memphis, to remodel building into apartment-house; 50x100 ft.; frame and brick veneer; tile roof; low pressure steam heat; electric lighting; cost \$12,000; H. F. McGee, Archt., 1304 Tennessee Trust Bldg., Memphis. (Lately noted.)

Tex., El Paso.—B. A. Booth has plans by and let contract to C. D. Pollock, 1230 Wyoming St., El Paso, to erect \$40,000 apartment-house; 2 stories and basement; brick and mill construction; asphaltum and gravel roof; steam heat to cost \$1500; subcontractors for heating, Elliott & Berry; plumbing, James A. Brennan, both of El Paso; painting, Wills & Day. (Lately noted.)

Tex., Houston.—Mrs. A. L. Barry will expend \$17,000 to erect apartment-house; 38x73 ft.; ordinary construction; old style tin roof; steam heat to cost \$1500; electric wiring; A. Delisle, Archt., 704½ Main St., Houston; general contract (lately noted) let to H. M. Hamilton, Houston; subcontractors let as follows: Modern Plumbing & Electric Co., plumbing; J. L. Wolfrom, electric wiring; J. L. Thiel, painting; all of Houston.

W. Va., Charleston.—Mrs. Lucy Dyer let contract to erect residence on Quarrier St.; 2 stories; brick veneer; cost \$9000.

### ASSOCIATION AND FRATERNAL

Fla., Arcadia.—Read & Murrell are reported to have let contract to erect building to be occupied by Woodmen of the World and Independent Order of Odd Fellows; cost \$15,000. (Lately noted.)

La., Lake Charles.—B. P. O. E. will expend \$5000 to remodel and erect addition to building; ordinary construction; composition roof; I. H. Humphrey, Archt., Lake Charles; contract (lately noted) let to Adolph See, Lake Charles.

N. C., Wilmington.—Knights of Pythias let contract to Rhodes & Underwood, Wilmington, to erect building at 206 Princess St.; ordinary construction; 3 stories; 43x66 ft.; tapestry brick with limestone front; lower floor for 2 stores; second floor, offices; third floor, lodgerooms; cost \$13,000; H. E. Bonitz, Archt., Wilmington. (Lately noted.)

N. C., Winston-Salem.—I. O. O. F. let contract to J. H. Gardner, Charlotte, to erect lodge building; 2 stories; \$4000 front of terra-cotta in imitation granite; ordinary construction; pressed brick; steam heat; electric lights; cost \$18,000; L. A. Bellonby, Archt., Charlotte. (Lately noted.)

Tenn., Coal Creek.—W. L. Wilson and others let contract to A. H. Leinart, Clinton, Tenn., to erect I. O. O. F. hall and opera-house. (See Theaters.)

### BANK AND OFFICE

Mo., Marshall.—A. J. Keys let contract to erect office, store and theater building. (See Theaters.)

Mo., Springfield.—Christopher & Simpson, St. Louis, have structural-iron contract in connection with office building to be erected by Keet estate, and for which general contract was let to L. W. Dumas, Jr., Construction Co., Columbia, Mo.; masonry contract, J. J. Hoffman; plans by Opel & Torlitt, Springfield and Kansas City, call for 10-story structure; steel frame; fireproof; cost \$175,000. (Previously noted.)

Mo., St. Louis.—Monward Realty Co. let contract to Jas. Stewart & Co., St. Louis, to alter first floor and basement of building at Broadway and Olive Sts. for Boatmen's Bank; will provide vaults, railings, cages, etc.; Eames & Young, Archts., St. Louis; cost \$128,000; let subcontracts to N. O. Nelson Marble Co. and John Bauman Safe Co.

N. C., Charlotte.—Standard Oil Co., 26 Broadway, New York, let contract to J. A. Jones, Charlotte, to erect office building; 2 stories and basement; cost \$35,000 to \$40,000; fireproof construction; steam heat; electric conduit system of lighting; previously noted. (See Machinery Wanted.)

N. C., Spencer.—J. G. Busby has plans by and let contract to J. R. Lazenby, Salisbury, N. C., to erect building for bank and drug store; 50x80 ft.; fireproof; reported 2 stories, brick and stone; cost \$9000 to \$10,000; heating plant, \$1000 to \$1200. Address Mr. Busby.

N. C., Wilmington.—Knights of Pythias let contract to erect building for offices, etc. (See Association and Fraternal.)

S. C., Greenville.—Drs. Jordan and Jervey let contract to Flske-Carter Construction Co., Greenville, to erect office building; 2 stories; cost \$16,000; J. E. Sirrine, Archt., Greenville.

S. C., Spartanburg.—First National Bank has plans by and let contract Hoggson Bros., New York, to erect bank building at Main and Magnolia Sts.; 2 stories; cost \$50,000.

Tex., Dallas.—Tom Angus let contract to erect building for offices and stores. (See Stores.)

Tex., Houston.—Texas Company let following subcontracts through Geo. A. Fuller Co., Gen. Contrs., 204 Dearborn St., Chicago, for office building: Common brick, Diamond Press Brick Co. and Lone Star Press Brick Co., Ferris, Tex.; comal rock, Jno. H. Blair Co.; excavating, hauling and sand, A. D. Price Co.; cement, Peden Iron & Steel Co. and Browne Building Supply Co.; all of Houston; mail chute, Cutler Mail Chute Co., Rochester, N. Y.; erecting and painting steel, C. M. Lane, Houston; carpentry and mill work, Sloane & Moller, 316 E. 65th St.; terra-cotta, Atlantic Terra-Cotta Co., 1170 Broadway; cut stone, E. F. Giberson & Co., 200 5th Ave.; ornamental metal, Hae-Winslow Co., 103 Park Ave.; electrical work, J.

Livingston & Co., 70 E. 45th St.; all of New York; plastering, McNulty Bros. Co., Railway Exchange, Chicago. (Contract for 3,000,000 lbs. steel lately noted let to Houston Structural Steel Co., Houston.)

W. Va., Wheeling.—Quarter Savings Bank will expend \$20,000 to erect building; 3 stories; 20x100 ft.; fireproof; concrete and Carey roofing; steam or hot-water heat; F. F. Paris, Archt., Wheeling; heating and wiring contracts not let. (Lately noted letting contracts for carpenter work, painting, glazing, etc.)

### CHURCHES

Mo., St. Louis.—Congregation Shaare Zedek let contract to Kramer & Voirel, St. Louis, to erect 1-story building; cost \$14,000.

S. C., Clinton.—Methodist Church let contract to C. L. Rounds Co., Clinton, to erect building; ordinary construction; metal roof; steam heat; electric lighting; cost \$25,000; Casey & Fant, Archts., Anderson, S. C. (Previously noted.)

S. C., St. Matthews.—Methodist church let contract at \$20,350 to W. Lee Harbin, Lexington, N. C., to erect building; 85x130 ft.; slate roof; electric lights; Wheeler & Stern, Archts., Charlotte, N. C. (Lately noted.)

Tex., Cleburne.—Anglin Street Methodist Church let contract to W. P. Hammett, Cleburne, to erect addition to building; concrete blocks; cost \$3900.

Tex., Ennis.—First Christian Church, Rev. L. Guy Arment, Pastor, let contract to Lawson & Kimble, Ennis, to erect building; 60x70 ft.; brick; cost \$15,000; sidewalks to cost \$300; Van Slyke & Woodruff, Archts., Fort Worth, Tex. (Lately noted.)

W. Va., Charleston.—Calvary Baptist Church, Rev. T. H. Binford, pastor, 726 Indiana Ave., let contract to J. E. Cain to supervise erection of building; 80x102 ft.; ordinary construction; steam heat; gas and electric lighting; cost \$40,000; Jas. L. Montgomery, Archt., Charleston. (Lately noted.)

### CITY AND COUNTY

Fla., Palmetto.—Library.—City let contract to Jones & O'Berry to erect Carnegie library; cost \$10,000. (Noted in February.)

Ga., Augusta.—Fire Station.—City let contract to T. O. Brown & Son, Augusta, to erect No. 7 fire-engine station-house; 2 stories; 50x81 ft.; brick and stucco; cement floors; tile roof; cost \$15,000; Thos. M. Campbell, Archt., 15 Johnson Bldg., Augusta.

Ga., Columbus.—Hospital.—City let contract to Southern Ferro-Concrete Co., Atlanta, to erect hospital; to Smith & Guests for heating, ventilating and plumbing, and to Walker Electric Co., Columbus, for electrical appliances; cost \$60,000; E. C. Wachendorf, Archt., Empire Bldg., Atlanta. (Lately noted.)

Tex., Dallas.—City Hall.—Shiras-Chassaling Electric & Mfg. Co., 921 Locust St., St. Louis, is reported to have contract at about \$25,000 to install electric fixtures in City Hall estimated to cost about \$1,000,000. (Previously fully detailed and other contracts noted.)

Tex., Dallas.—Comfort Stations.—Park Board let contract at \$2700 to Trinity Construction Co., Dallas, to erect 2 comfort stations in City Park; at \$475 to J. J. Maddigan, Dallas, for plumbing; at \$25 to Gulbrandsen, Williams & Co., Dallas, for electrical fixtures; brick; red tile roof; Lang & Witchell, Archts., Dallas. (Lately noted.)

Tex., LaGrange.—Jail.—L. R. Wright & Co., Dallas, have contract to erect proposed jail; cost \$16,000.

Tex., Terrell.—City Hall.—City let contract at \$2335 to Modern Plumbing Co., Terrell, for steam heating system for city hall, for which general contract was let to Berry & Metcalf, Corsicana, Tex.; fireproof; pitch and gravel roof; Van Slyk & Woodruff, architects, Fort Worth. (Lately noted.)

### COURTHOUSES

La., Bastrop.—Falls City Construction Co., Louisville, Ky., general contractor to erect Morehouse parish courthouse, let subcontracts to Home Heating & Plumbing Co., Monroe, La., for plumbing and heating, and to Barnes Electric Construction Co., New Orleans, for electrical work; Stevens & Nelson, Archts., 21 floor Liverpool & London & Globe Annex Bldg., New Orleans. (Lately noted.)

Tenn., Winchester.—Franklin County Commissioners let contract to Little-Cleckler Construction Co., Anniston, Ala., to erect courthouse; cost \$70,000; C. K. Colley, architect, Nashville, Tenn. (Lately noted.)

Tex., Falfurrias.—Brooke county let contract

to Westlake & Mizell, San Antonio, to erect courthouse; 96x58 ft.; fireproof; slate roof; electric lighting; cost \$54,000; Alfred Giles Co., Archt., San Antonio. (Lately noted.)

### DWELLINGS

Ala., Birmingham.—William Leary let contract to A. L. Burnes, Birmingham, to erect frame dwelling; D. O. Whilldin, Archt., Title Guarantee Bldg., Birmingham.

Ala., Birmingham.—F. T. Frierson let contract to O'Rear & Penn to erect 2-story dwelling; Miller & Martin, Archts., Title Guarantee Bldg., Birmingham.

Ala., Birmingham.—L. K. Mackey let contract to J. F. Smith to erect dwelling; 2 stories; frame; cost \$5000. (Lately noted.)

Ala., Birmingham.—C. D. Ebersole let contract to John K. Holmes, Birmingham, to erect two 2-story dwellings; cost \$5000.

Ala., Birmingham.—Louise J. Kline let contract to C. M. Allen, Birmingham, to erect residence; brick veneer; 2 stories; cost \$6000.

Ala., Birmingham.—W. L. Sessions let contract to O. L. Gark to erect 2-story brick-veneer residence; cost \$4000.

Ala., Tuscaloosa.—A. Laycock let contract to erect bungalow; Miller & Martin, Archts., Title Guarantee Bldg., Birmingham, Ala.

D. C., Washington.—G. R. Walker let contract to G. W. Barkman, 800 Massachusetts Ave. N. W., Washington, to erect dwelling at 17 Dogwood St. N. W.; cost \$5000; W. C. Nichols, Oxford Bldg., Washington.

D. C., Washington.—M. Diebitsch let contract to W. L. Turner, 41 Q St. N. W., Washington, to erect 3 dwellings at 2012 to 2016½ 12th St.; cost \$7000; A. E. Landvoigt, Archt., 1338 G St. N. W., Washington.

Fla., Arcadia.—B. F. Foreman is reported to have let contract to erect 5 bungalows.

Fla., Arcadia.—Fred S. Gore let contract to G. H. Kirkpatrick, Arcadia, to erect 2-story residence at Hickory St. and Monroe Ave.; cost \$3500.

Fla., Miami.—R. F. Davis, 213 Ave. B, will erect dwelling; one story; 26x50 ft.; reinforced concrete; red tile Spanish Imperial roof; gas and electric lights; cost \$3500; plans and construction by owner; contractor for tile roof, to cost about \$650, J. E. Wilson; plumbing, to cost about \$150, Scheible & Entwistle, Miami; address owner. (Lately noted.)

Fla., Minneola.—Frank Koehnen, Dayton, O., let contract to Tabor & Williams, Clermont, Fla., to erect bungalow.

Fla., Minneola.—Geo. Kling, Dayton, O., let contract to Tabor & Williams, Clermont, Fla., to erect bungalow.

Fla., Titusville.—E. C. Langston let contract to J. E. Easterly, Titusville, to erect bungalow; 7 rooms; 34x50 ft.

Ga., Augusta.—Mrs. Emma J. Mates let contract to E. L. Crooks, Augusta, to erect residence; 2 stories; brick and frame stucco; metal shingle roof; hot-air heat; electric lights; cost \$9000; G. Lloyd Preacher, Archt., Augusta.

Ky., Coal Run.—J. B. Polley is reported to have plans by and let contract to Munaw & Ross to erect residence; 10 rooms; brick; electric light from Keyser Coal Co.'s power station.

Ga., Atlanta.—Mrs. Bertha M. Swift let contract to F. E. Merkle, Atlanta, to erect frame dwelling at 22 Lombardy Way; cost \$4000.

Ga., Atlanta.—F. S. Hall let contract to J. B. Gunter & Co., Atlanta, to erect 3 frame dwellings on Tilden St.; cost \$4250.

Ga., Atlanta.—Mrs. C. J. Maddox let contract to R. M. Abernathy & Co., Atlanta, to erect 2-story frame dwelling at 45 Candler St.; cost \$3000.

Ga., Atlanta.—D. M. Mitchell let contract to J. J. Harvil, Atlanta, to erect frame residence to cost \$3000.

Ga., Augusta.—J. A. Best has plans by and let contract to Woodward Contracting Co., 405 Leonard Bldg., Augusta, to erect residence; 2 stories and basement; frame and stucco; tin and-tile roof; hardwood floors; cost \$7000 to \$7500.

Ga., Augusta.—J. Lee Etheredge will expend \$9500 to erect residence; 41x55 ft.; tin tile roof; hot-water heat; G. Lloyd Preacher, Archt., Augusta; general contract (lately noted) let to Woodward Contracting Co., 405 Leonard Bldg., Augusta; plumbing and heating, to Barrett & Dobson, Augusta, at \$925.

Md., Baltimore.—Wm. C. Frederick will expend \$25,000 to erect dwelling on Lake Front

Drive; 38x44 ft.; 3 stories; ordinary construction; block and stucco; slate roof; hot-water heat; A. Lowther Forrest, Archt., 11 E. Lexington St., Baltimore; contract (late ly noted) let to R. Gladfelter & Chambers, 2974 Woodberry Ave., Baltimore.

Md., Baltimore.—Josephine Williams, 1309 W. Lombard St., will erect 2-story brick store and dwelling at Edmondson Ave. and 12th St.; slate roof; steam heat; electric lights; cost \$3000; W. T. Childs, Contr., 1416 W. 20th St.; F. E. Beall, Archt., 306 St. Paul St.; both of Baltimore.

Md., Baltimore.—J. Swan Frick let contract to Cowan Building Co., 106 W. Madison St., Baltimore, to erect residence on Charlotte Circle, Guilford; 3 stories; brick; stone trimmings; hot-water heat; electric lights; cost \$75,000; John Russell Pope, Archt., 527 Fifth Ave., New York. (Previously noted.)

Md., Mt. Washington.—Wallace MacWilliams let contract to J. Henry Smith, 1426 Light St., Baltimore, Md., to erect cottage on North Ave., Hill Top Park; 2½ stories; frame; slate roof; hot-water heat; hardwood floors.

Mo., Clayton.—Chas. M. Rice, St. Louis, will expend \$35,000 to erect dwelling; ordinary construction; slate roof; heating contract separate; La Beaume & Klein, Archts., St. Louis; contract (late ly noted) let to W. M. Sutherland Building & Construction Co., St. Louis.

Mo., St. Louis.—J. J. Doyle will expend \$6500 to erect dwelling; 30x36 ft.; ordinary construction; slate and tile roof; hot-water heat to cost \$600; electric lighting; Thos. C. Lee, Archt., Syndicate Trust Bldg., St. Louis; contract (late ly noted) let to Casey & O'Keefe Construction Co., 621 Victoria Bldg., St. Louis.

Mo., St. Louis.—F. Scheller let contract to Wm. Cuba, St. Louis, to erect 2-story dwelling at 4301 College St.; cost \$6000.

Mo., St. Louis.—Hackman Real Estate Co. let contract to A. J. Gamache, St. Louis, to erect two one-story dwellings; cost \$4000.

Mo., St. Louis.—Johanna Seyfaith let contract to C. H. Seyfaith, St. Louis, to erect 3 one-story frame dwellings; cost \$3000.

S. C., Anderson.—Anderson College let contract to J. L. Hembree, Anderson, to erect dwelling for president; brick veneer; slate roof; steam heat; cost \$7000; Casey & Fant, Archts., Anderson. (Previously noted.)

S. C., Honea Path.—Mrs. Brock let contract to W. A. Stevenson to erect residence; cost \$9000.

Tenn., Columbia.—Miss Mary Beecher is reported to have let contract to erect residence.

Tex., Dallas.—H. W. Jester let contract to Sparks Bros., Dallas, to erect residence; 6 rooms; 2 stories; frame; cost \$3500; ordinary construction; shingle roof; gas heat, grates and stoves; H. Kramer, Archt., Dallas. (Late ly noted.)

Tex., El Paso.—Mayfield Building & Improvement Co., 612 First National Bank Bldg., will erect several bungalows; 6 rooms; cost \$3500; shingle roof; plans and construction by owner; masonry contract let to W. C. Taylor; late ly noted. (See Machinery Wanted.)

Tex., Plainview.—J. F. Garrison will expend \$6300 to erect residence; 52x63 ft.; concrete, frame and stucco; slate-coated shingle "Flex-a-Tile" roofing; Honeywell hot-water system of heating to cost \$600; two-wire incandescent lighting, etc.; \$400; L. A. Kerr, Archt., Plainview; contract let to Harrison-Kerr Co., Plainview; late ly noted. (See Machinery Wanted.)

Va., Norfolk.—Mrs. N. J. Land will expend \$5300 to erect residence; 28x39 ft.; mill construction; slate roof; hot-water heat; Brown & Lehman, Archts., Norfolk; contract (late ly noted) let to L. M. McCloud, Norfolk.

Va., Norfolk.—E. L. Parker Co. will expend \$4000 to erect residence; 26x40 ft.; mill construction; slate roof; hot-water heat; contract (late ly noted) let to L. M. McCloud, Norfolk.

Va., Richmond.—Mrs. A. V. Longworth will erect frame dwelling on 24th St.; cost \$5756; Marcellus E. Wright, Archt., 20 Allison Bldg., Richmond; heating and plumbing contract let to W. P. Longworth & Co., 1 N. 7th St., Richmond; boiler and radiators furnished by American Radiator Co., Chicago; plumbing fixtures, Haines, Jones & Cadbury, Richmond.

#### GOVERNMENT AND STATE

Ala., Mobile.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., let contract at \$28,000 to John W. Emery, 1524 Sansom St., Philadelphia,

Pa., to erect postoffice; Alabama marble; 2 stories and basement; 1-story rear extension; ornamental terra-cotta and stucco facing; 18,000 sq. ft. ground area; fireproof; copper and tile roof. (Late ly noted.)

Ark., Arkansas City.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., let contract to General Construction Co., Milwaukee, Wis., to erect postoffice building; 80x56 ft.; 1 story and basement; 1st floor fireproof; tar and gravel roof; heating plant to cost \$3000.

D. C., Anacostia.—Barns.—Dept. of Interior let contract at \$28,327 to J. L. Marshall, 700 10th St., Washington, to erect 2 cow barns at Government Hospital for Insane. (Late ly noted.)

D. C., Washington.—Bureau of Printing and Engraving.—Treasury Dept., Oscar Wenderoth, Supervising Archt., let general contract to W. E. Mooney, Evans Bldg., Washington, to construct promenade roof; 290x36 ft.; cost \$8703; ordinary construction; asbestos shingles; contract for iron work, Alexandria Iron Works, Evans Bldg.; asbestos shingles, Keasbey & Mathison, 1111 14th St.; W. T. Gallher & Bro., 13th and B Sts.; all of Washington. (Mr. Mooney late ly noted as lowest bidder.)

Miss., Grenada.—Postoffice.—Treasury Department, Oscar Wenderoth, Supervising Archt., Washington, D. C., let contract at \$40,310 to Algernon Blair, Montgomery, Ala., to erect postoffice; 2 stories and basement; 3800 sq. ft. ground area; stone and brick facing; composition and slate roof. (Late ly noted.)

Va., Fort Harrison (not a postoffice).—Kitchen, etc.—D. B. Houston, Depot Quartermaster, let contract to Alexander Weston, Hampton, Va., to erect outbuilding and kitchen. (Late ly noted.)

#### HOTELS

Ky., Mt. Sterling.—H. C. McKee let contract to S. D. Peacock, Cincinnati, to erect hotel; fireproof; cost (without mechanical equipment) \$100,000; Weber, Werner & Adkins, Archts., Cincinnati. (Late ly noted.)

Md., Baltimore.—Hugh Reilly has plans by John K. Stack, 12 E. Lexington St., Baltimore, and let contract to Fidelity Construction Co., Knickerbocker Bldg., Baltimore, for improvements to hotel at 410 W. Franklin St.; one section, 22x50 ft., 4 stories and cellar; one section, 20x23 ft., 1 story and cellar; cost (without mechanical equipment) \$40,000; fireproof; slag roof; steam heat to cost \$3000; electric lighting, \$2000; granolithic sidewalks, \$100; electric passenger elevator, \$3000. (Late ly noted.)

Tex., El Paso.—D. C. Seaman let contract to W. L. Pringle, Box 736, El Paso, to erect rooming-house; 35x90x40 ft.; cost \$10,000; composition roof; electric lighting; cost of heating and plumbing, \$1800; let contract to W. E. Fletcher, Houston, for stone and concrete work, \$900; W. C. Taylor, brick, to cost \$1400. (Late ly noted.)

#### MISCELLANEOUS

Md., Glen Echo.—Memorial.—Norcross Bros., Worcester, Mass., are reported to have contract to erect main building of group for Clara Barton Memorial; plans by A. B. Pierson, 328 School St., N. W., Washington, D. C., call for "T" shaped building 100x160 ft.; cost \$100,000; also plans are reported tentatively agreed upon for First A11 Building and Nurses' Home (accommodations for 25) to cost \$75,000 and \$50,000 respectively.

#### RAILWAY STATIONS, SHEDS, ETC.

Ga., Atlanta.—Atlanta & West Point R. R., C. A. Wickersham, Prest. and Gen. Mgr., let contract to erect warehouse. (See Warehouses.)

N. C., Mt. Airy.—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contract to Porter & Boyd, Charlotte, N. C., to erect passenger depot. (Previously noted.)

N. C., North Wilkesboro.—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contract to Porter & Boyd, Charlotte, N. C., to erect combination freight and passenger depot; 36x240 ft.; brick; tin shingle roof. (Previously noted.)

N. C., Reidsville.—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contract to J. P. Pettyjohn & Co., Lynchburg, Va., to erect passenger station; 22x100 ft.; let contract to General Fire Extinguisher Co., Charlotte, N. C., for heating plant. (Previously noted.)

S. C., Bath.—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contract to Porter & Boyd, Char-

lotte, N. C., to erect combination passenger and freight depot; 21x82 ft.

S. C., Kershaw.—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contract to Porter & Boyd, Charlotte, N. C., to erect passenger depot; 25x88 ft.; electric lighting. (Late ly noted.)

S. C., Spartanburg.—Piedmont & Northern Lines, A. C. Lee, Engr. M. W., Greenville, S. C., let contract to J. A. Jones, Charlotte, N. C., to erect 4 additional warehouses on Spring St.; 4 stories; 15,000 sq. ft. floor space; cost \$35,000; one building for passenger terminal. (Previously noted.)

Tex., Dallas.—J. W. Thompson, 509 Boatman's Bank Bldg., St. Louis, Mo., general contractor to erect union station for Union Terminal Co., C. H. Dana, Ch. Engr., let sub-contract to Hughes & O'Rourke, Praetorian Bldg., Dallas, to erect buildings; other work to be handled by general contractor; entire work consists of union depot, train shed, roundhouse, coach shed, express building, platforms, yards, etc.; grading required for tracks 700,000 to 800,000 yds. material; track-laying interlocking included in contract; estimated cost (complete) \$3,000,000; Jarvis Hunt, Archt., 53 W. Jackson Blvd., Chicago, Ill. (Late ly noted.)

Va., South Boston.—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contract to Wise Granite & Construction Co., Richmond, to erect brick passenger depot; 25x106 ft.; tile roof; cost \$12,000.

#### SCHOOLS

Ala., Auburn.—City, J. W. Wright, Mayor, let contract to B. E. Hudson, Opelika, Ala., to erect high school; cost \$12,000. (Late ly noted.)

Ark., Marianna.—Marianna School Dist. Directors let contract at \$20,985 to J. E. Hollingsworth & Co., Memphis, Tenn., to erect addition to and improve school; will provide tile roof supported by steel girders, etc. Aubrey L. Matthews, Archt.

Fla., Seffner.—Hillsboro County School Board, Tampa, let contract to erect school. (See Fla., Tampa.)

Fla., Tampa.—Hillsboro County School Board let contracts at \$2520 and \$2170, respectively, to A. G. Thorp Co., Tampa, to erect Seffner and Lake Fern schools; at \$7690 to J. A. Foxworth, Tampa, to erect Jackson Heights school; at \$4400 to W. S. Ferreira, Tampa, to erect Seminole Heights school; W. R. Biggers, Archt., Tampa; also having plans prepared by Mr. Biggers for building on Livingston Ave., Gilchrist Dist., of bungalow type; 2 rooms and tower. (Late ly noted.)

Ga., Camilla.—School Board is reported to have let contract to J. W. Middleton, Camilla, to repair school; plans call for metal shingle roof, steel ceiling in auditorium, etc.

Miss., Greenville.—Greenville Academy let contract to T. P. Reynolds, Greenville, to erect building to accommodate about 60 boys; 2 stories; brick; swimming pool, etc. (Late ly noted.)

Miss., Meridian.—City let contract at \$8359.50 to C. H. Dabbs, Meridian, to erect Tuxedo Park School according to plans by C. M. Card, Meridian. (Previously noted.)

Mo., Springfield.—Banner Iron Works, St. Louis, has contract for structural iron to erect school at Fremont and George Sts., for which Pauly & Ipsen, 210 N. Campbell St., Springfield, have general contract; masonry contract let to Geo. C. Sharp, 421 Winfield St., Springfield; cut-stone contract to Nesbit & Hirschberg; plans by O. L. Frettnier, Springfield, call for 2-story-and-basement structure; 60x80 ft.; tar and gravel roof; cost \$33,000. (Other contracts late ly noted.)

N. C., China Grove.—Rowan County Farm Life School, R. W. Gray, Chrmn. Bldg. Com., let contract to Hobbins & Bradshaw, Salisbury, N. C., to erect 2-story dormitory to accommodate 50 girls; 46x107 ft.; ordinary construction; tin shingle roof; cost \$15,000; Hook & Rogers, Archts., Charlotte.

Okla., Dewar.—School Board of Dist. No. 26 let contract to J. E. Henchie, Henrietta, Okla., to erect \$5536 addition to school; 40x70 ft.; gas and electric lights, cost \$150; steam heat, cost \$800; J. W. Roberts, Archt., Claremore, Okla. (Late ly noted.)

Tenn., Chattanooga.—University of Chattanooga let contract to T. S. Moody & Co., Chattanooga, to erect gymnasium; 108x90 ft.; fireproof; slate or tile roof; red brick; limestone trimmings; copper dome and cupola; gallery to seat 500 to 600; colonial style; shower baths, etc.; cost \$40,000; Richard G. Deacon, Archt., Chattanooga. (Late ly noted.)

Tenn., Copperhill.—Polk County Comms., Ducktown, Tenn., let contract to King &

Eaves, Copperhill, to erect school; brick; W. B. Rucker, Chrmn. Bldg. Com.; 60x90 ft.; 2 stories and basement; ordinary construction; composition roof; electric wiring; cost \$30,000; Snoddy & Bull, Archts., Chattanooga. (Late ly noted.)

Tenn., Oakwood, P. O. at Knoxville.—School Board let contract to erect school; 2 stories and basement; steam heat; 3 classrooms; cost, including fixtures, \$27,500; L. C. Waters, Archt., Knoxville. (Late ly noted.)

Tenn., Rockwood.—City let contract at \$36,000 to T. S. Moody & Co., Chattanooga, to erect school; 18 rooms and auditorium; at \$6947 to Knoedler & Meredith, Chattanooga, for installing plumbing and heating fixtures; H. L. Huntington, Archt., Chattanooga. (Late ly noted.)

Tex., Dallas.—Board of Education let contract at \$31,135 to J. M. Green, Dallas, to erect 12-room addition to Henry Brown School; 6 rooms completed in 60 days, balance in 120 days; fireproof; steam heat.

Tex., Galveston.—School Board let contract at \$5200 to Vanderslice & Sturdivant, Galveston, to improve East End Dist. School.

Tex., Texas City.—Independent District School Trustees let contract to E. H. Hogue, Texas City, to erect addition to Wolvin school; cost \$8497. (Late ly noted.)

Tex., Roaring Springs.—Board of Education let contract to Fred Boone, Amarillo, Tex., to erect school; 60x80 ft.; mill construction; gravel roof; stoves; cost \$14,000; R. S. Glenn, Archt., Wichita Falls, Tex. Address Contractor. (Late ly noted.)

#### STORES

Ark., Ashdown.—O. Harris will expend \$4400 to erect store building; 50x70 ft.; Johns-Manville 3-ply asbestos roof; heating plant to cost \$50; concrete sidewalks; contract (late ly noted) let to C. C. Smith, Box 291, Ashdown. (See Machinery Wanted.)

Ala., Birmingham.—W. B. Leedy & Co. let contract to C. M. Allen, Birmingham, to erect 2-story brick building; cost \$8000.

Ala., Birmingham.—Fili Polembo let contract to J. O. Peebles, Birmingham, to erect 3-story brick building.

Ala., Birmingham.—N. L. Miller let contract to P. E. Bostick, Birmingham, to erect 2-story brick building; cost \$13,500 (exclusive of plumbing, wiring and two hand elevators); 50x140 ft.; ordinary construction; brick with flash brick facings; gravel and tar roof; Miller & Martin, Archts., Birmingham. (Late ly noted.)

Ga., Augusta.—Mrs. Juanita Morgan let contract to erect store and apartment. (See Apartment-houses.)

Ky., Hickman.—Steve Stahr let contract to W. J. Spradlin, Hickman, to erect brick business building; will contain 2 stores.

Md., Baltimore.—Mrs. Josephine Williams, 1309 W. Lombard St., let contract to erect store and dwelling. (See Dwellings.)

Md., Baltimore.—Jenkins & Jenkins, 216 N. Charles St., let contract to Morrow Bros., Fidelity Bldg., Baltimore, to erect store building at 216 N. Charles St.; 4 stories; brick; 20x35 ft.; cost \$20,000; Baldwin & Pennington, Archts., Professional Bldg., Baltimore. (Previously noted.)

Md., Baltimore.—J. T. Whitehurst, 401 E. Oliver St., let contract to H. H. McClellan, 15 E. Fayette St., Baltimore, to erect additional story and alter building at 529 N. Howard St.; cost \$3500.

Md., Baltimore.—J. W. Bruton let contract to Willard E. Harn Co., 213 N. Calvert St., Baltimore, to remodel building for Purnell Art Co.; cost \$3000; J. E. Laferty, Archt., 113 Pleasant St., Baltimore. (Late ly noted.)

Md., Baltimore.—F. Bucher & Sons, 218 N. Charles St., have plans prepared by Baldwin & Pennington, Professional Bldg., Baltimore, for store and warehouse to replace present structure; 4 stories; ornamental brick; 24x135 ft.; cost \$20,000; Henry Smith & Sons Co., Contr., 7 E. German St., Baltimore.

Miss., Meridian.—C. H. Dabbs, Meridian, has contract to remodel Cahn Bldg. for S. H. Kress & Co.; will arrange store on first floor with plate glass front on two sides; cost \$12,000 to \$15,000.

Mo., Marshall.—A. J. Keys let contract to erect store, office and theater building. (See Theaters.)

Mo., St. Joseph.—Huber estate let contract to P. P. Buddy, St. Joseph, to erect store building; 86x90 ft.; ordinary construction; cost \$16,000; tar and gravel roof; steam heat; electric lighting; Eckel & Aldrich, Archts., St. Joseph; heating and plumbing contract let to Byrne & Powers Plumbing Co., St. Joseph. (Late ly noted.)



Mo., St. Louis.—Pulitzer estate, Fred'k N. Judson, Trustee, Rialto Bldg., let contract to Jas. Stewart & Co., St. Louis, to erect mercantile building; 8 stories and basement; 25 ft. 6 in. by 114 ft. 3 1/2 in.; fireproof; reinforced concrete; composition roof; heating, lighting, etc., not determined; Mauran, Russell & Crowell, Archts., 1629 Chemical Bldg., St. Louis; cost \$70,000. (Lately noted.)

N. C., Spencer.—J. G. Busby let contract to erect building for store and bank. (See Bank and Office.)

N. C., Wilmington.—Knights of Pythias let contract to erect building for stores, etc. (See Association and Fraternal.)

Tenn., Chattanooga.—Chattanooga Trust Co. let contract to G. W. Bowman to erect store building; 50x55 ft.; ordinary construction; composition roof; electric conduit system of lighting; cost \$3000; W. H. Sears, Archt., 821 James Bldg., Chattanooga. (Lately noted.)

Tenn., Knoxville.—R. H. Edington will repair building at 315 Wall Ave. lately burned; 26x145 ft.; ordinary construction; tin roof covered with tar and gravel; stoves; electric lighting; concrete sidewalks; hand elevator; cost \$12,000; Albert Baumann, Knoxville, reported as Archt.; J. M. Dunn & Son, Contrs., Knoxville.

Tex., Cross Plains.—Higginbotham Trading Co. has plans by and let contract to J. H. Boswell, De Leon, Tex., to erect store building; 150x115 ft.; 1 story; ordinary construction; tin roof; private electric plant to cost \$250. (Lately noted.)

Tex., Dallas.—Tom Angus let contract to Thos. Beggs & Co., 1417 Praetorian Bldg., Dallas, to erect store and office building; 50x90 ft.; 2 stories and basement; cost \$25,000; semi-fireproof; built-up asbestos roofing; I. A. Walker, Archt., 901 Southwestern Life Bldg., Dallas. (Lately reported to remodel building to cost \$4000.)

Va., Norfolk.—Henry Kirn will expend \$30,000 (cost without mechanical equipment) to erect store building; 100x100 ft.; ordinary construction; gravel roof; elevator to cost \$1500; Jno. Keevan Peebles, Archt., Norfolk;

general contract (lately noted) let to Jesse Johnson, 619 Law Bldg., Norfolk; sub-contracts as follows: O'Brien & Co., W. D. Murray & Co., both of Norfolk; Dietrich Bros., Pleasant and Davis Sts., Baltimore; amount of subcontracts, \$12,000.

## THEATERS

Mo., Marshall.—A. J. Keys will expend \$50,000 to erect theater, store and office building; 60x120 ft.; mill construction; composition roof; Geo. H. Kennerly, Archt.; contract (lately noted) let to Frank P. McClure, 5416 Maple Ave., St. Louis, Mo.

Mo., St. Louis.—Supreme Realty Co. let contract to T. Segel, St. Louis, to alter moving-picture theater at 419 N. 6th St.; cost \$4000.

Mo., St. Louis.—Jas. Wilson let contract to G. P. Wuest, St. Louis, to alter theater at 1042 N. Grand Ave.; cost \$3000.

Tenn., Memphis.—Bayard Snowden will expend \$65,000 (cost without mechanical equipment) to erect theater on Front St.; 40x150 ft.; reinforced concrete; reinforced concrete (trussed) roofing; cost of heating plant, \$7000; cost of lighting plant, \$5000; Stelgemeyer & Kennerly, St. Louis, and Harker & Cairns, Asso. Archts., Scimitar Bldg., Memphis; contract (lately noted) let to Jas. Alexander Construction Co., Memphis.

Tenn., Coal Creek.—W. L. Wilson and others let contract to T. H. Leinart, Clinton, Tenn., to erect opera-house and I. O. O. F. hall lately noted; 40x90 ft.; 2 stories; brick; ordinary construction; composition, slate or galvanized-tin shingle roof; cost \$6550. (See Machinery Wanted.)

Tex., Fort Worth.—E. H. Phillips will expend \$45,000 (including equipment) to erect motion-picture theater; 50x95 ft.; fireproof; gravel roof; gas stoves; electric lighting; L. B. Weinman, Archt., 711 1/2 Main St., Fort Worth; construction under supervision of architect; let following subcontracts: S. A. Tomlinson for building; Wortham & Shotts, electric wiring, etc.; Garrison & Co., plumbing; Chas. Martenau, decorating; Texas Heating & Ventilating Co., ventilation; all of Fort Worth; completion by Aug. 1. (Lately noted.)

## WAREHOUSES

Ga., Atlanta.—Atlanta & West Point R. R., C. A. Wickersham, Pres. and Gen. Mgr., let contract to R. J. Carr & Co., Atlanta, to erect warehouse at Lee and Ashby Sts.; cost \$30,000.

Ky., Lexington.—Farmers' Home Tobacco

Warehouse Co. let contract to Combs Lumber Co., Lexington, to erect warehouse, and to Empire Bridge Co., Lexington, to furnish steel; 100x400 ft.; mill construction; composition roof; cost \$35,000; F. J. Manley, Archt., Lexington; material purchased.

Ky., Richmond.—Madison Tobacco Warehouse Co. let contract to Empire Bridge Co., Lexington, Ky., to erect addition to warehouse; 60x86 ft.; 600 sq. ft. floor space.

Md., Baltimore.—F. Bucher & Sons, 218 N.

Charles St., let contract to erect store and warehouse. (See Stores.)

S. C., Greenville.—Piedmont & Northern Lines, A. C. Lee, Engr. M. W., let contract to Fliske-Carter Construction Co., Greenville, to erect 2 warehouses on McBees Ave. in addition to those lately erected; cost \$35,000.

S. C., Spartanburg.—Piedmont & Northern Lines, A. C. Lee, Engr. M. W., Greenville, S. C., let contract to erect 4 additional warehouses. (See Railway Stations.)

## RAILROAD CONSTRUCTION

### RAILWAYS

Ala., Birmingham.—It is again reported that the Illinois Central is surveying and will build an extension from Jackson, Miss., to Birmingham, about 200 mi. C. H. Markham is Pres., and A. S. Baldwin, Ch. Engr. at Chicago.

Ark., Hot Springs.—Hamp Williams of Hot Springs, chairman of committee on plan for railroad from there to Mena, Ark., says the proposition is yet too uncertain to report.

Fla., Mulberry.—Export Phosphate Ry. & Terminal Co. will be the name of the corporation to build the railroad of the Export Phosphate Co. of Mulberry to phosphate drying plant near Tampa. Line, with branches, about 50 mi. long. Railway officers, it is reported, will be E. L. Blood, Pres.; H. E. C. Capewell, V.-P., and E. Albert Pierce, Secy. and Treas. Capital \$50,000 to \$2,000,000.

Fla., St. Petersburg.—Morrissey, Bouly & Co. are reported to have the contract lately let for the extension of the Tampa & Gulf Coast R. R. from Belleaire to St. Petersburg, about 15 mi. C. H. Lutz, Tampa, is Gen. Mgr.

Ga., Macon.—Charter has been granted to the Macon Terminal Co. for the proposed union station; capital \$100,000. W. A. Winburn, A. R. Lawton and others of Savannah, H. W. Miller and others of Atlanta, J. B. Munson and others of Macon are incorporators.

Ga., Statesboro.—Survey for an extension of the Register & Glenville R. R. to Statesboro, 10 or 12 mi., is being made. B. K. Williamson is Supt. at Hagan, Ga.

Ky., Hopkinsville.—R. E. Cooper and John H. Bell of Hopkinsville have applied for a franchise for a street and interurban railway. Eastern capital is said to be interested.

La., Thibodaux.—Construction of an electric railway from Lockport to Thibodaux to Donaldsonville, about 40 mi., is proposed. Rights of way obtained between the first two points. L. P. Caillouet, Dr. H. S. Smith and Alfred Picot of Thibodaux, Walter Ohlmeier of Platteville and others, including, it is said, some Canadian capital, are interested.

Miss., Corinth.—Citizens of Corinth have voted \$50,000 bonds to aid construction of the proposed Nashville, Shiloh & Corinth Ry. Clifton C. Thoms of Corinth is secretary. Allen W. Jones, Augusta, Ga., is also interested.

Miss., Columbus.—Mississippi Electric Ry. Co., which recently published charter, is reported organized and plans its first construction from Columbus, Miss., to Memphis, Tenn., about 150 mi. Directors include F. W. Crosby, Chas. F. Sherrod, Maj. Battle Bell, Dr. J. W. Lipscomb and others, all of Columbus.

Mo., Springfield.—Survey for a railroad from Springfield through the Ozark region to Mountain Home, Ark., about 100 mi., is being made for E. C. McAfee of Springfield, Mo., and K. V. Loba and H. S. Wickersham of North Yakima, Wash. John Landers and D. J. Landers, both of Springfield, are also interested.

Mo., St. Louis.—Concerning the report that the Terminal Railroad Assn. of St. Louis was authorized to issue \$1,000,000 more of bonds for improvements, the company says there is no new work contemplated. Presumably the bonds are to cover work already done. W. S. McChesney, Jr., is Pres.

N. C., Wilmington.—Wilmington & Fort Fisher R. R. & Power Co. is chartered to build a railroad from Wilmington to Fort Fisher Sea Beach, 18 mi.; capital stock \$125,000, of which \$18,000 is subscribed. The Kure Land & Development Co. is interested, including H. A. Kure, Sr., H. A. Kure, Jr., Wm. L. Lawrence W., Andrew E. and Ellen Kure.

S. C., Rock Hill.—Chamber of Commerce, it is reported, has practically closed an agreement for the construction of a railroad

from Rock Hill to connect with the Seaboard Air Line. It would be about 15 mi. long. Survey is to begin immediately. C. W. Roberts is Secy.

Tenn., Linden.—Perry county has voted to issue \$100,000 of bonds to aid construction of the proposed Nashville, Shiloh & Corinth Ry. Clifton C. Thoms, Corinth, Miss., is Secy.

Tenn., Huntingdon.—Johnson-Porter Clay Co. has asked franchise to cross public roads with proposed narrow-gauge railroad from near McKenzie, on Nashville, Chattanooga & St. Louis Ry., to clay deposits in Carroll and Henry counties.

Tenn., Nashville.—The Davidson County Court has granted to the Tennessee & Kentucky Interurban Ry. Co. a right of way on the White's Creek Turnpike road for its proposed line from Nashville, Tenn., to Adairville, Ky., via Goodlettsville, White House, Cross Plains and Lamont, Tenn., about 50 mi. John P. Helms of Nashville is president.

Tex., Austin.—J. B. Arlitt, Box 351, Austin, Tex., proposes to build a railroad. He is interested in coal lands in Webb county, Texas.

Tex., Brownwood.—C. E. Clark of Velasco, Tex., is conferring with the Brownwood Chamber of Commerce relative to constructing a railroad from Vernon via Brownwood to San Antonio, Tex., about 300 mi.

Tex., Conroe.—The Delta Land & Lumber Co. will build a tram road 15 mi. long from Conroe to its timber lands. I. H. Petty, Kansas City, Mo., is V.-P. and Gen. Mgr.

Tex., Dallas.—\$5000 in a total of \$20,000 has

been subscribed to survey for the proposed interurban railway to connect Dallas, Gainesville and Wichita Falls. Committees are at work. J. A. Kemp of Wichita Falls, Wm. Doran and others of Dallas are interested.

Tex., Dallas.—Texas & Pacific Ry., it is reported, will lay new rails and make other improvements between Texarkana and Fort Worth. C. H. Chamberlin is Ch. Engr. at Dallas.

Tex., Greenville.—Stone & Webster Engineering Corp., E. T. Moore of Dallas, Tex., Gen. Mgr., is to complete the Dallas-Greenville line of the Eastern Texas Traction Co., 52 mi. long. Grading, bridges, culverts, etc., are practically finished. Karner Bros. were the contractors. F. E. White is Pres. and J. W. Crotty V.-P. and Gen. Mgr. of the traction company.

Va., Danville.—A resolution has been offered in Council to hold an election on a proposed bond issue for \$100,000 for a city-owned railroad terminal, but nothing definite has yet been done. Harry Wooding is Mayor.

Va., Richmond.—Richmond & Rappahannock River Ry. Co. has almost completed its line from Richmond to the Pamunkey River, 16 1/2 mi., and will begin passenger service in a few weeks. Jos. E. Willard of Richmond is Pres.

W. Va., Philippi.—R. E. Talbott, one of the incorporators of the Philippi & Clarksburg Traction Co., which proposes to build a line to connect the two places named in its title, says that the company is not yet organized, and it is not likely that the road will be built soon.

## STREET RAILWAYS

N. C., Newbern.—The Newbern-Ghent Ry. Co. contemplates building an extension. C. J. McCarthy is Gen. Mgr.

Tex., Dallas.—The street railway franchise for Fitzhugh Ave., between Columbia and Grand Aves., which was asked by J. T. Jones and others, was refused by the Board of City Commrs. It is intimated that another application may be filed.

Va., Richmond.—Virginia Ry. & Power Co. has sold \$750,000 of 5 per cent. bonds for improvements and extensions. T. S. Wheelwright is Pres.

## MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

### "WANTS"

**Air Compressor.**—Bristol Machine & Locomotive Works, C. H. Rhodes, Gen. Mgr., Bristol, Va.—Prices on air compressor; about 10x12 in.

**Barge.**—Mississippi River Com., Fourth Dist., U. S. Engr. Office, Queen and Crescent Bldg., 346 Camp St., New Orleans, La.—Bids until Aug. 12 to construct and deliver steel barge. Information on application; C. O. Sherrill, Major, Engrs.

**Boilers.**—See Mill Machinery, Cottondale Lumber Co.

**Boiler.**—Harrison-Kerr Co., Plainview, Tex.—Prices on boiler for heating plant.

**Brick (Silica).**—Arkansas Lime Co., Ruddells, Ark.—High-grade silica brick for lining furnaces.

**Bottling Equipment.**—Coeburn Bottling Co., T. B. Hillman, owner, Coeburn, Va.—Prices on equipment for bottling plant to bottle 400 to 600 doz. bottles soda water daily.

**Bridge Construction.**—Gaston and Mecklenburg County Commrs., Gastonia and Charlotte, N. C.—Bids until July 30 to construct steel bridge across Catawba River at Mt. Holly, N. C.; includes 2 spans 200 ft. long, with steel approach at each end; clear roadway, 16 ft.; bridge floor, 35 ft. above water; substructure concrete and cylinder piers; \$20,000 appropriation; plans and specifications at offices of Mecklenburg County Commrs., W. M. Long, Chmn., Charlotte, and Gaston County Commrs., O. G. Falk, Chmn., Gastonia, N. C.

**Bridge Construction.**—Fluvanna County Commrs., Palmyra, Va.—Bids until July 22 to construct steel bridge across Cunningham Creek; 122 ft. 9 in. long; consists of one standard 70-ft. span and three 17-ft. 6-in. spans; concrete substructure; alternate

bids on cement rubble abutment; P. St. J. Wilson, State Highway Commr., Richmond, Va.; blueprints and specifications obtainable from Childrey Co. for 36 cents and postage.

**Bridge Construction.**—Buckingham County Commrs., Buckingham, Va.—Bids at Courthouse, July 21, to construct bridge across Slate River, 7 mi. from Dillwyn; length 286 ft.; 12 ft. roadway; steel superstructure, one 50-ft. truss to be moved and erected on new site; concrete substructure; plans and specifications after July 9 at office Clerk of Circuit Court; G. P. Coleman, State Highway Commr.

**Bridge Construction.**—U. S. Engr. Office, J. C. Oakes, Major, Engrs., Louisville, Ky.—Bids until July 15 to construct direct lift bridge over Louisville and Portland Canal at 18th St.; information on application.

**Building Materials.**—T. H. Leinart, Clinton, Tenn.—Four I beams, 24-in. deep by 38-ft., 85 lbs. to ft.; truss rods and bolts for wood truss framing, 2x4, 2x6, 2x10—12 ft., 14x16 ft., sheathing, flooring and wood fiber plaster, cement and general building materials.

**Building Materials.**—C. C. Smith, Box 291, Ashdown, Ark.—Prices on I beams, plate-glass, etc., for \$4400 store building.

**Building Materials.**—Board of Education, W. T. Hutchens, Pres., Huntsville, Ala.—Prices on building materials for \$30,000 school building.

**Building Materials.**—Baptist Church, Rev. Walter M. Lee, pastor, Rochelle, Ga.—Prices on building materials for \$20,000 church building.

**Cars (Gasoline).**—No. 1572, care Manufacturers Record, Baltimore, Md.—Corre-

spondence by owner of patent with railroad and interurban companies, gas engine manufacturers and builders of freight and passenger cars; view to manufacturing gasoline-propelled passenger and freight cars.

**Cars (Dump).**—Hall Bros. Rock Crusher, Brownwood, Tex.—Six 1-yd. dump cars, side dump, 24-in. gauge.

**Cars.**—H. Kleinhaus Co., 50 Church St., New York.—Several 4-yd. Western cars; first-class condition; give lowest net price and shipping point first letter.

**Cement.**—See Building Materials, Clinton, Tenn.

**Crane (Locomotive).**—Pennsylvania Equipment Co., West End Trust Bldg., Philadelphia, Pa.—Second-hand 15 to 20-ton 8-wheel locomotive crane.

**Creamery Equipment.**—Dr. L. S. Rogers, care West Bank & Trust Co., West, Miss.—Creamery equipment; capacity 1000 to 1500 cows.

**Drainage.**—Drainage Dist. No. 2, Ripley County, Chas. L. Ferguson, Atty., Doniphan, Mo.—Will soon let contract to dig drainage ditch.

**Dredging.**—U. S. Engr. Office, Galveston, Tex.—Bids until Aug. 12 for dredging at Port Aransas; information on application; C. S. Riche, Lieut.-Col. Engrs.

**Culverts (Metal).**—Charleston-Isle of Palms Traction Co., Meeting and Pinckney Sts., Charleston, S. C.—Interested in prices on 1000 to 2000 ft. 18 and 24-in. metal culverts.

**Dredging.**—U. S. Engr. Office, Lansing H. Beach, Col., Engrs., 309 Custom-house, Baltimore, Md.—Bids until July 24 to dredge in Broad Creek. Information on application.

**Drill Press.**—Bristol Machine & Locomotive Works, C. H. Rhodes, Gen. Mgr., Bristol, Va.—Prices on 18 or 20-in. drill press.

**Electric-light Equipment.**—City of Wallhalla, S. C., Wade C. Hughes, Commr., Public Works.—Prices on wire, poles, meters, etc.

**Electric-light Plant.**—City of Valdosta, Ga. (D. S. Quartermaster, Supt. Waterworks, to be addressed).—Probably want one or two 75 K. W. direct-connected units for street lighting; also about 25 miles wire, with appliances for 500 incandescent or 100 arc lamps.

**Electric-light Plant.**—W. B. Cooper's Compress & Warehouse Co., Wilmington, N. C.—Electric-light plant; capacity 50 to 75 lights.

**Electrical Equipment.**—Shirley P. Jones, Route 1, Lewisburg, Tenn.—Prices on electrical equipment for 7 or 8-room bungalow.

**Electrical Equipment.**—Panama Canal, F. C. Boggs, General Purchasing Officer, Washington, D. C.—Bids until Aug. 7 to furnish two 44,000-volt substations at Darien and Gamboa, including transformers, switches, lightning arresters, switch panels, annunciators, fittings, etc.; blanks and general information relating to this circular (No. 861) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile, Galveston, Seattle and Los Angeles; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; Commercial Club, Tacoma, Wash., and Chamber of Commerce, Portland, Ore.

**Electrical Machinery.**—See Mill Machinery, Cottondale Lumber Co.

**Electrical Machinery.**—Fairland Light & Power Co., L. D. Long, Mgr., Fairland, Okla.—30 K. W., A. C. generator and exciter.

**Electrical Machinery.**—Newburg Light & Power Co., R. D. Pinto, Prest., Newburg, Mo.—Prices on engine and generator.

**Electrical Machinery.**—Panola Light & Power Co., Conyers, Ga.—Wants prices on electric motor; proposes adding 500 H. P. unit to hydro-electric development.

**Electrical Machinery.**—D. W. Day, Hartselle, Ala.—Prices on 200 H. P. water turbine, 300 H. P. water turbine, electrical generators, etc., for hydro-electric development in 2 units of 200 and 300 H. P. each.

**Engine (Steam).**—Inman Gin Co., J. H. Ballenger, Secy., Inman, S. C.—Prices on steam engine; about 40 H. P.

**Engine (Steam).**—See Electrical Machinery, Newburg Light & Power Co.

**Engines.**—Advance Oil Co., W. Mayfield, Gen. Mgr., Scottsville, Ky.—Engines and pumps for oil wells.

**Engines.**—See Mill Machinery, Cottondale Lumber Co.

**Engine.**—Siler City Milling Co., Siler City, N. C.—Crude oil engine of 50 H. P.

**Gas Machinery.**—Coggeshall Hardware Co., Darlington, S. C.—Addresses of manufacturers of machines to generate gas for cooking.

**Grading.**—Madison County Highway Com., Marshall, N. C.—Bids until July 23 to grade about 10.2 mi. of road, divided into 4 sections leading out from Marshall and Hot Springs; plans and specifications on file with J. B. Clingman, County Road Engr.; Highway Com. will furnish bidders with proposal blanks.

**Graveling.**—W. H. Brown, City Secy., Polytechnic, Tex.—Bids until July 20 to grade and pave Annis St. for 795 ft.; Avenue G, 224 ft., and Essex Ave., 1050 ft.; plans and specifications on file with City Secy.

**Glue.**—S. Warren, Gainesville, Fla.—Data and prices on (large quantities) odorless and colorless glue to cement cedar sawdust into boards or lumber.

**Heating Plant.**—S. S. Murphy, Supt. Education, Mobile, Ala.—Bids until July 27 for installation steam-heating system for Barton Academy, Russell, Semmes and Old Shell Rd. schools; plans and specifications by Stevens & Nelson Co., New Orleans, La.; alternate bids received for system known as one pipe low-pressure gravity system of direct radiation; plans and specifications obtainable from S. S. Murphy, Supt., Mobile, or Archts., Stevens & Nelson Co., Liverpool, London and Globe Annex, New Orleans.

**Heating Plant.**—Crescent Co., Greenwood, S. C.—Prices on heating plant for motion-picture theater.

**Heating Plant.**—Shirley P. Jones, Route 1, Lewisburg, Tenn.—Prices on hot-water heating plant for 7 or 8-room bungalow.

**Hoisting Engine.**—Samuel T. Williams, 223 N. Calvert St., Baltimore, Md.—Second-hand, single-drum, double-cylinder hoisting engine; 15 to 20 H. P.; without boiler.

**Ice-cream Machinery.**—Coeburn Bottling Co., T. B. Hillman, owner, Coeburn, Va.—Prices on machinery for plant to manufacture 100 gals. ice-cream daily.

**Ice Machinery.**—Dr. L. S. Rogers, care West Bank & Trust Co., West, Miss.—Prices on 5-ton ice plant.

**Ice Machinery.**—Crystal Ice Works Co., J. D. Clark, Propr., Bartow, Fla.—Prices on 25-ton ice plant complete, with additional 10 tons cold-storage equipment.

**Ice Machinery.**—Dixie Canner Co., Little Rock, Ark.—Correspondence with manufacturers of ice machinery; capacity 2 to 6 tons daily.

**Ice Machinery.**—Coeburn Bottling Co., T. B. Hillman, owner, Coeburn, Va.—Prices on machinery for 5-ton ice plant.

**Ice Plant.**—George Miller, Charles St. and Mt. Royal Ave., Prest. Knickerbocker Ice Co., Baltimore, Md.—Data and prices on remodeling ice plant; has 200-ton steam-driven equipment; considering electricity to

replace steam; will consider single or double compressors, condensers, cumulator, etc.

**Insulating Material.**—Middlesborough Electric Works (H. J. Herron interested), Middlesborough, Ky.—Prices on all kinds of insulating materials for electrical repair work.

**Levee Construction.**—Board of State Engrs., Frank M. Kerr, Chief, 213 New Orleans Court Bldg., New Orleans, La.—Bids until July 28 for levee work—raising and enlarging—Mississippi River, right bank; Donna Vista levee, East Carroll parish, 30,000 cu. yds.; Longwood levee, East Carroll parish, 175,000 cu. yds.; Mascot levee, Madison parish, 170,000 cu. yds.; amounts approximate; further information with Board.

**Levee Construction.**—Board of State Engrs., 213 New Orleans Court Bldg., New Orleans, La.—Bids until July 28 on levee work, Mississippi River, right bank; Milliken Bend levee, 125,000 cu. yds.; Cabin Teale levee, 75,000 cu. yds.; Duckport levee, 125,000 cu. yds.; all Madison parish; Fairview levee, Concordia parish, 80,000 cu. yds.; amounts approximate; further information on application to Board, or to O. W. Campbell, Secy., and E. C. Rhodes, Prest., Fifth Louisiana Levee Dist., Tallulah.

**Lighting Fixtures.**—Crescent Company, Greenwood, S. C.—Prices on electric fixtures for motion-picture theater.

**Lighting Fixtures.**—Harrison-Kerr Co., Plainview, Tex.—Prices on electric-lighting fixtures for \$6300 residence.

FOR the benefit of business concerns, engineers, contractors, machinery manufacturers, dealers and others who find it profitable to follow up daily the industrial, commercial, railroad and financial development of the South and Southwest as published in this Construction Department,

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**Lumber.**—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids July 28 to furnish 21,500 ft. white ash, firsts and seconds, schedule 7019; delivery Charleston, S. C., and Philadelphia, Pa.; 55,000 ft. long-leaf yellow pine No. 2, schedule 7019; delivery Charleston, S. C.; for schedules apply navy pay office nearest navy-yard.

**Lumber.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Aug 4 to furnish 90,000 ft. kiln-dried, box grade, N. C. pine, schedule 7038; delivery Navy-yard, Norfolk, Va.; 17,000 ft. Virginia pine, schedule 7042, and 64,000 ft. 2x12-in. by 16-ft. No. 1 long leaf yellow pine, schedule 7028; delivery Navy-yard, Washington, D. C.

**Mill Machinery.**—Cottondale Lumber Co., Arthur Williams, V.-P., Cottondale, Fla. Prices on boilers, engines, pumps, planers, edgers and all mill machinery; also electrical equipments.

**Milling Machine.**—Bristol Machine & Locomotive Works, C. H. Rhodes, Gen. Mgr., Bristol, Va.—Prices on milling machine.

**Mining Machinery.**—Melvin C. Church, III, Fort Worth, Tex.—Names and addresses manufacturers of machinery for mining coal, iron, oil, mica, etc.

**Mixer (Concrete).**—C. C. Smith, Box 291, Ashdown, Ark.—Prices on concrete mixer.

**Mixing (Mortar) Machinery.**—Payne Fireproofing Co., 606 Chamber of Commerce, Birmingham, Ala.—Prices on mortar-mixing machines.

**Oil (Road).**—Holt, Gant & Holt Cotton Mfg. Co., Elon College, N. C.—Correspondence with manufacturers of and dealers in road oil; interested in oiling about 4 mi. macadam road.

**Oil and Sawdust.**—Cedarite Chemical Works, Bogalusa, La.—Correspondence with manufacturers of cedar oil and cedar sawdust.

**Partitions (Hollow Tile).**—J. A. Jones, 404 Realty Bldg., Charlotte, N. C.—Prices on hollow tile partitions.

**Paving.**—City of Birmingham, Ala.—Bids until July 14 to pave N. 25th St. from 12th to 17th Aves.; cost \$12,000; Julian Kendrick, City Engr.

**Paving.**—Street Com., Wm. I. Ward, Chrmn., Graham, N. C.—Bids until July 23 to furnish material, labor and appliances, and grade, pave or otherwise improve streets; cost within \$50,000; specifications, etc., on application to Chrmn.; J. N. Ambler, Cons. Engr., Winston-Salem, N. C.

**Paving, etc.**—Mayor (J. A. Loyd) and Board of Aldermen, Lewisburg, Tenn.—Bids until July 25 to construct 11,000 sq. yds. bituminous macadam, 10,000 sq. yds. plain macadam and 1200 lin. ft. storm sewer; approximate quantities; plans and specifications office R. C. Fergus, City Engr.

**Paving.**—Town Council, Danville, W. Va. Bids until July 18 to furnish material and lay 8000 ft. concrete sidewalks 4 ft. wide; each bidder to submit two bids, one on walks, curbing included, and one on walks, curbing excepted. Address communications regarding work, etc., to H. J. Crawford, Town Recorder; Afton Jackson, Mayor.

**Paving.**—Robt. Gerlach, City Secy., Denison, Tex.—Bids until July 18 to grade and pave 600 block and intersection of Barrett Ave., W. Main St. from Mirick to Barrett Ave., except 7 ft. in center of street occupied by Texas Traction Co.; estimated cost \$7550; instructions and blank proposals furnished bidders by Robt. Gerlach, City Secy., or A. B. Clenny, City Engr.

**Piano.**—Crescent Co., Greenwood, S. C.—Prices on piano photo player for motion-picture theater.

**Pipe, etc.**—Texas Pipe Line & Gas Co., Waco, Tex.—Bids Aug. 1 for 35 mi. 6-in. steel pipe; plain end, with Hammon, Dayton or Dresser couplings, rubber gaskets, best steel (Bessemer preferred) and stand test of 800 lbs. to in.; J. J. Potts, Engr., Waco.

**Piping.**—Advance Oil Co., W. Mayfield, Gen. Mgr., Scottsville, Ky.—Two-in. tubing and 6¼-in. casing for oil wells.

**Planer.**—Bristol Machine & Locomotive Works, C. H. Rhodes, Gen. Mgr., Bristol, Va.—Prices on planer.

**Pulverizers.**—W. H. Barnwell, Box 604, Charleston, S. C.—Addresses of manufacturers of pulverizers.

**Pump.**—Chowan Cotton Oil & Fertilizer Co., Edenton, N. C.—Underwriters' fire pump; second-hand, 750-gal., duplex steam, size 16x9x12, brass fitted throughout.

**Pump.**—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids July 28 to furnish motor-driven vacuum pump and control panel, schedule 7011; delivery Norfolk, Va.; for schedules apply navy pay office nearest navy-yard.

**Pumps.**—See Mill Machinery, Cottondale Lumber Co.

**Pumps.**—Advance Oil Co., W. Mayfield, Gen. Mgr., Scottsville, Ky.—Pumps for oil wells.

**Pumps, etc.**—Panama Canal, F. C. Boggs, General Purchasing Officer, Washington, D. C.—Bids until Aug. 3 for centrifugal pumps, cast-iron pipe fittings, Venturi meters, fuse panels, electric cable, galvanized conduit, check valves, steel angles, cardboard, paper, crude carbolic acid, caustic soda and rosin; blanks and general information relating to this circular (No. 862) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

**Pumping Engine.**—O. R. Whitney, 39-41 Cortlandt St., New York.—Good second-hand water-works condensing pumping engine, capacity 3,500,000 gals. water in 24 hrs. under boiler pressure of 90 lbs.; domestic pressure required, 105 lbs.; fire pressure, 135 lbs.;



flywheel pattern, cross compound; capable of delivering 90,000,000 ft. lbs. water per 1000 lbs. steam; prompt delivery.

**Rails.**—Hall Bros. Rock Crusher, Brownwood, Tex.—4000 ft. 12-lb. rails.

**Reinforcing.**—C. C. Smith, Box 291, Ashdown, Ark.—Prices on reinforcing material.

**Road Construction.**—Road Dist. No. 2 of Trinity County, Geo. M. Waller, Chrmn. of Board, Trinity, Tex.—Bids until July 27 to construct sand-clay roads; about 33 mi. clearing, grubbing, grading and culverts; detail plans and specifications mailed from office supervising engineer upon receipt of \$5; C. M. McKibben, County Judge, Groveton, Tex.

**Road Construction.**—Limestone County Commrs., Athens, Ala.—Bids until July 27 to grade, drain and surface with gravel part of Decatur-Athens Rd., beginning at river; W. S. Keller, State Highway Engr., Montgomery.

**Road Construction.**—H. D. Johnson, County Auditor, Corsicana, Tex.—Bids until July 18 to construct gravel roads, including grading, bridges and culverts, in Road Dist. No. 3; plans and specifications obtainable from Geo. A. Duren, Consult. Engr., Court-house, at cost of \$5, or may be seen at his office; R. R. Owen, County Judge.

**Sand.**—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids July 23 to furnish 300 tons silica sand, 2000 lbs. to ton, schedule 7029; delivery Norfolk, Va.; for schedules apply navy pay office nearest navy-yard.

**Sawdust (Cedar).**—See Cedar Oil and Sawdust, Cedarite Chemical Works.

**Screens.**—See Washing and Screening Plant, Hall Bros. Rock Crusher.

**Seatings.**—Crescent Co., Greenwood, S. C. Prices on chairs for motion-picture theater.

**Sewer Construction.**—City Secy., Houston.—Bids until July 29 to construct sanitary sewers on Welch st. from G. H. & S. A. Ry. to Euclid Ave., Andrew St. from Helmer to Wilson and Wilson St. from Andrew to San Felipe; specifications and information obtainable from E. E. Sands, City Engr.; Ben Campbell, Mayor.

**Sewer Construction.**—City, W. S. Knotts, Mayor, Belzoni, Miss.—Bids until Aug. 4 to construct about 3 mi. vitrified-pipe sewers from 8 to 12 in. diam., with man-holes, flush tanks, etc.; also for sewage-pumping plant, consisting of motor-driven centrifugal pump, etc.; plans, specifications, etc., on file office of Jeff Clark, Clerk, from July 20; Bobo Engineering Co., Engr., Clarksdale, Miss.

**Sewer Construction.**—Mayor (J. A. Loyd) and Board of Aldermen, Lewisburg, Tenn.—Bids until July 25 on about 1200 lin. ft. storm sewer; R. C. Fergus, City Engr. (See Paving.)

**Shingles.**—Mayfield Building & Improvement Co., 612 First National Bank Bldg., El Paso, Tex.—Prices on shingles for roofing capable of standing hot sun, hard winds and rains.

**Steam Shovel.**—Hall Bros. Rock Crusher, Brownwood, Tex.—Steam shovel, ½ or ¾ yd. capacity.

**Steam Shovel.**—H. Kleinbans Co., 50 Church St., New York.—Model 61 Marion shovel; first-class condition. Give lowest net price and shipping point first letter.

**Steel Balls.**—Wichita Well Works, Wichita Falls, Tex.—Steel balls; sizes ¼, ½ and ¾ in.

**Tiling.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Aug. 4 for laying 2000 sq. ft. tiling on ships of U. S. Navy; delivery Navy-yard, Charleston, S. C.; schedule 7029.

**Tin Manufactures.**—R. C. Burch, Spring Hill, Tenn.—Addresses of manufacturers of tin articles.

**Theater (Motion Picture) Equipment.**—Crescent Co., Greenwood, S. C.—Prices on equipment for motion-picture theater, including machines, screen and plaster ornaments.

**Truss Rods and Bolts.**—See Building Materials, Clinton, Tenn.

**Ventilating Equipment.**—Crescent Co., Greenwood, S. C.—Prices on ventilating and cooling equipment for motion-picture theater.

**Vacuum Cleaner.**—Harrison-Kerr Co., Plainview, Tex.—Prices on vacuum cleaner for \$6300 residence.

**Washing and Screening Plant.**—Hall Bros. Rock Crusher, M. J. Hall, Mgr., Brownwood, Tex.—Sand and gravel washing and screening plant, capacity 100 to 200 yds. daily.

**Water Meters.**—Commrs. Dist. of Columbia, Room 509, District Bldg., Washington, D. C.—Bids until July 29 to furnish and deliver 5000 or more water meters; specifications and proposal forms obtainable on application to Purchasing Officer, D. C., Room 320, District Bldg.

**Water-works.**—City, O. B. Pirkey, Mayor, New Boston, Tex.—Bids until Aug. 3 to construct water-works, drill battery of shallow wells, lay about 3800 ft. 6-in. and 1350 ft. 4-in. cast-iron water pipe, 4800 ft. 2-in. galvanized iron pipe, 6 hydrants and 6 gate valves, 2 oil engines and triplex pump and power-house, 100-ft. 50,000-gal. tower and tank; plans and specifications on application to Nagel & Petersen, Engrs., Muskogee, Okla., on payment of \$5.

**Water Wheels.**—D. W. Day, Hartselle, Ala.—Prices on 200 H. P. and 300 H. P. water turbine. (See Electrical Machinery, D. W. Day.)

**Well-drilling Machinery.**—Melvin C. Churchill, Fort Worth, Tex.—Names and addresses manufacturers of machinery to drill for oil, coal, iron, mica, etc.

**Wire.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Aug. 4 to furnish 7250 ft. 30,000 C. M., single-conductor, stranded wire; delivery Navy-yard, Norfolk; schedule 7024.

**Wire Hooping (Hoghead) Machinery.**—Wm. Walker Jones, 510 Tucker Bldg., Raleigh, N. C.—Correspondence with manufacturers of machine to put wire hoops (of black annealed soft wire) on to-hacco hoghead measuring 4-ft. diam. by 4½ ft. high.

**Woodworking (Heading) Machinery.**—Jesse Scoggins, No. 505 W. 7th St., Rome, Ga.—Prices on good second-hand heading machinery.

## FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

### FINANCIAL CORPORATIONS

Ala., Waterloo.—Farmers and Merchants' Bank of Waterloo, Incptd., began business July 1; capital \$10,000 paid up. Buck Sharp, Prest.; J. S. Haynes, V.-P.; J. L. Cooper, Cash.

Ala., Wilsonville.—Wilsonville State Bank has begun business; capital \$10,000; J. H. Pennington, Prest. and Cash.; H. E. Smith, V.-P.

Ark., Hope.—Citizens' Bank of Hope is chartered; capital \$100,000; R. M. Lagrone, Prest.; C. C. Spragins, Cash. This is a conversion of the Citizens' Bank of Hope.

Fla., Ellenton.—Ellenton State Bank chartered; capital \$15,000. Incorporators: E. W. Stapleton, Prest.; L. D. Stapleton, Cash., Zephyrhills, Fla.; W. H. Brown, D. F. Richards, J. R. Wood and C. P. Fuller. Business is to begin in about 60 days.

Fla., Miami.—A new trust company, capitalized at \$500,000, is being organized by Tatum Bros.

Fla., Ocala.—Munroe & Chambliss National Bank chartered; capital \$50,000; surplus \$30,000; T. T. Munroe, Prest.; A. E. Gerig, Cash. This is a conversion of the Munroe & Chambliss Bank. Business began as national bank July 8.

Ga., Atlanta.—North American Mortgage Co. is being organized with \$500,000 capital, with privilege of increasing to \$2,000,000; incorporators, J. H. McNamara, J. H. Prentiss, T. M. Knox, W. J. McNamara, W. P. Kent, Thos. B. Felder and S. H. Fuller.

Ga., Lagrange.—Farmers' Bank & Trust Co. has begun business; capital \$15,000; T. E. Cooper, Wilmington, Prest.; Samuel Abbot, Cash.; H. W. Brothers, 1st V.-P.; D. W. Wood, 2d V. P.

Ky., Henderson.—Ohio Valley Banking & Trust Co. has filed articles of incorporation; capital \$300,000. Incptrs.: James R. Barrett, Paul Marra, Edwin Hoge, H. P. Barrett, David Clark, Joe Kochler, F. P. Tap and E. W. Winstead. This is a consolidation of the Ohio Valley Bank & Trust Co. and the Planters' State Bank.

Ky., Louisville.—Audubon Building and Savings Assn. Incptd.; capital \$100,000; F. Klotter, 1519 S. Preston St., Prest.; W. T. Harris, V.-P.; F. Gernert, 1509 S. Preston St., Secy. and Treas. Business began July 1.

Ky., Stone.—First National Bank of Stone

has made application to organize; capital \$25,000; organizers, R. H. Heyser, W. Prockter, W. A. Lester, H. C. Weller and C. E. Stupelsky.

Miss., Biloxi.—First National Bank of Biloxi chartered; capital \$100,000; W. K. M. Dukate, Prest.; E. C. Tenemire, Cash. This is a conversion of the Bank of Biloxi.

Miss., Holly Springs.—Potts Camp State Bank is organized by A. Q. Greer, Dr. F. P. Boatner, B. A. Edwards, J. R. Taylor and L. W. Brown of Potts Camp and S. W. Mullins and M. A. Greene of Holly Springs. Business is to begin Sept. 1.

Mo., Chaffee.—Chaffee Trust Co. chartered; organizers, S. A. Ruch, J. A. Finch, R. W. Finley and Elwood Alley; capital \$100,000; directors, S. V. Ruch, Jas. A. Finch, J. W. Loy, R. W. Finley, Elwood Alley, W. V. Miller and J. W. Ingram.

Mo., Edgar Springs.—People's Bank of Edgar Springs began business June 9; capital \$10,000; J. E. Yowell, Prest.; G. I. Bradford, V.-P.; F. M. Eaves, Cash.

Mo., Fortescue.—Bank of Fortescue is van county is chartered; capital \$15,000; di-W. Van Camp, John P. Iden, G. H. Minton, George V. Kinkle, John E. Slate, J. E. Alkire and R. C. Brownee.

Mo., Osgood.—Osgood State Bank of Sullivan county is chartered; capital \$15,000; directors, J. H. Sohlbaum, R. J. Brown, E. N. Smith, J. A. Caldwell, A. E. Carpenter, L. C. Johnson, Hiram Hatcher and J. W. Moore.

Mo., Whiteside.—Whiteside Bank is organized with George W. Whiteside, Prest.; S. L. Tucker, V.-P., and G. J. McCune, Cash.

N. C., Pikeville.—Bank of Pikeville is chartered; capital \$10,000; organizers, K. D. Perkins, L. D. Crawford and others.

Okla., Stroud.—Stroud National Bank is approved; capital \$25,000. Organizers: J. B. Charles, A. A. Seaton, L. Patrick, E. L. Conklin and N. Hoffman.

Okla., Drumright.—First National Bank is approved; capital \$25,000. Organizers: N. Holman, Guthrie; P. A. Norris, A. G. Adams, W. M. Robertson and G. Tipton.

S. C., Anderson.—E. P. Vandiver is reported organizing a new bank.

S. C., Woodruff.—The conversion of the People's Bank into the First National Bank is approved; capital \$50,000.

Tenn., Dickson.—Dickson National Bank chartered; capital \$30,000; J. T. Halbrook, Prest.; Oury Harris, Cash. This is a conversion of the Dickson State Bank.

Tenn., Memphis.—Equitable Investment & Loan Co. has made application for charter; capital \$25,000. Incptrs.: C. B. Quinn, B. M. White, P. H. Vernon and J. W. Carter.

Tenn., Pulaski.—The report regarding the organization of the Citizens' Bank is erroneous.

Tex., Dallas.—Jules E. Schneider Investment Co. is chartered; capital \$900,000; Incptrs.: Jules E. Schneider, Mrs. Florence B. F. Schneider, E. H. Cary, F. M. Etheridge, George L. Moore, Leon Blum, all of Dallas, and Bruce F. Moran of Seattle, Wash.

Tex., Lipan.—First National Bank of Lipan is organized to succeed the Farmers and Merchants' Bank of Lipan; capital, \$25,000; W. S. Fant, Prest.; W. L. Mugg, V.-P.; W. H. Ronch, Cash. Business is expected to begin about July 25.

Tex., Galveston.—Galveston County Abstract Co. has filed charter; capital \$20,000; incorporators, F. L. Luckett, Crawford C. Johnson and L. C. Luckett.

Tex., Pharr.—Pharr Investment Co. chartered; has begun business; capital \$5000; organizers, S. R. Gawthrop, John A. Cook and Houston Jones, Pharr; A. Wayne Wood, Brownsville, Tex., and H. N. Pharr, Olmitier, La.

Va., Norfolk.—Seaside Building Assn. Incptd.; capital \$10,000 to \$100,000; D. W. Byrd, Prest.; J. C. Brooks, Secy.

### NEW SECURITIES

Ala., Auburn.—\$10,000 5 per cent. 30-year school-building bonds were voted June 22; dated July 1, 1914; maturity July 1, 1944. Bonds will be sold at private sale. Address B. B. Ross, Chrmn. Bond Committee, City Council.

Ala., Phoenix City.—Bids will be received until noon Aug. 1 for \$15,000 5 per cent. 25-year water-works bonds; denomination \$1000; dated Aug. 1, 1914. W. Moss Harrison is Mayor.

Ark., Marion.—\$350,000 6 per cent. Crittenden county viaduct bonds have been sold. Address County Commrs.

Fla., Bradentown.—\$30,000 6 per cent. street improvement bonds were purchased by Han-

chett Bond Co. Dated July 1, 1914; maturity \$10,000 July 1, 1915 to 1917. This is part of an authorized issue of \$100,000.

Fla., Bradentown.—\$30,000 water-works, \$10,000 storm sewer, \$5000 fire department and \$15,000 funding floating debt 5 per cent. 20-30-year bonds have been purchased at private sale by John Nuven, Chicago, at par; denomination \$500; dated July 1, 1914.

Fla., Bronson.—Steps are being taken to issue \$15,000 school bonds Cedar Key's Special School Dist. No. 2, Levy county. Address County Commrs.

Fla., Clearwater.—Election to vote on \$70,000 bonds for city improvements and floating redeeming indebtedness is to be held Oct. 6. J. R. Jeffords is Mayor.

Fla., Daytona.—\$125,000 5 per cent. sewerage and drainage bonds were purchased by Snyder, Spitzer & Co., Toledo.

Fla., Delray.—Bids will be received until 7 P. M. Aug. 10 for \$20,000 6 per cent. water and electric-light bonds. A. F. Miller is Mayor and Anne Neilly, Town Clerk.

Fla., Floresville.—\$60,000 Wilson county road bonds defeated. E. D. Mayes is County Judge.

Fla., Fort Lauderdale.—\$55,000 bonds Dist. No. 1, voted June 9, for new building and to retire \$20,000 old bonds, will bear 6 per cent. Denomination \$1000. Address R. E. Hall, Supt., Board of School Trustees.

Fla., Gainesville.—\$30,000 school bonds were voted July 9; W. R. Thomas, W. R. McKinstry and Geo. P. Long, Trustees.

Fla., Jacksonville.—\$150,000 armory bonds have been voted and validated by both the Circuit and Supreme Court of the State, and steps will now be taken to place issue on the market. Address Board of Trustees for County Armory Bonds.

Fla., Miami.—Bids will be received until 7.30 P. M. Aug. 6 for \$250,000 of an authorized issue of \$400,000 5 per cent. street, sewer, fire, sanitation and dock bonds; denomination \$1000; dated July 1, 1914; maturity 1919 to 1944. W. B. Moore, City Clerk.

Fla., Pensacola.—Bids will be received until noon Aug. 15 by Board of Commrs. for \$400,000 4½ per cent. dock and belt railroad improvement bonds; denomination \$1000; dated Oct. 1, 1913; maturity Oct. 1, 1943. A. Greenhut is Mayor and C. W. Eggart City Clerk. Further particulars will be found in the advertising columns.

Fla., Plant City.—Election is to be called to vote on \$20,000 street and \$20,000 water-works bonds. Address The Mayor.

Fla., Tallahassee.—\$34,000 street and paving bonds are voted; \$4000 relaying water mains and \$9000 gas, electric-light and water-works improvement bonds defeated. D. M. Lowry is Mayor.

Fla., Tampa.—Bids will be opened Sept. 3 for \$500,000 Hillsborough county road bonds. Address County Commrs.

Ga., Americus.—\$7000 school and \$3000 hospital bonds, recently voted, have been validated by the Superior Court and will soon be placed on the market. J. E. Poole is Chrmn., Finance Committee, City Council.

Ga., Bainbridge.—Election is to be held Aug. 12 to vote on \$20,000 city hospital bonds. Address The Mayor.

Ga., Chatsworth.—Election is to be held Aug. 5 to vote on \$13,000 Murray county water-works bonds. Address The Mayor.

Ga., Cityview (P. O. Columbus).—Election is soon to be held to vote on the following 5 per cent. bonds: \$3000 11-30-year school; \$5300 14-30-year street; \$6900 19-30-year sewer; denomination \$100. Address The Mayor.

Ga., Guyton.—Bids will be received until 7 P. M. July 30 by M. P. Porter, Secy.-Treas. Local Tax School Dist., for \$12,000 6 per cent. 20-year school bonds.

Ga., Summerville.—A Chicago bond company is reported to have purchased Lyerly and Summerville, Chattooga county, school bonds. Address County Commrs.

Ga., Pearson.—School bonds are reported sold. Address Board of Education.

Ga., Swainsboro.—Question of issuing \$20,000 sewer bonds is under consideration. Address The Mayor.

Ky., Cynthiana.—\$15,000 school bonds defeated; J. Martin, Secy. Board of Education.

Ky., Pikeville.—\$55,778.30 6 per cent. street-improvement bonds have been purchased by Kelly Bros., contractors, Portsmouth, O., at par and accrued interest.

Ky., Winchester.—Board of Education has asked the City Council for bond issue of \$100,000 for new school building. W. O. Parrish is Secy. of the Board.

Ky., Vanceburg.—Election is soon to be held to vote on \$150,000 Lewis county road bonds. Address County Commrs.

Ky., Vanceburg.—\$150,000 Lewis county road bonds are voted. Address County Commrs.

La., Donaldsonville.—\$10,500 5 per cent. 25-year bonds Smoke Bend Drainage Dist., Ascension parish, are voted. Address Police Jury.

La., Red River.—Bill authorizing issue of \$500,000 5 per cent. 50-year bonds Atchafalaya and Bayou Boeuf Levee Dist. has passed the Legislature. Address Dist. Commrs.

Md., Cambridge.—\$21,000 5 per cent. Dorchester county bonds have been purchased by Nelson Cook & Co., Townsend Scott & Son and Baker Watts & Co., Baltimore, at \$21,854.28.

Md., Easton.—\$15,000 street, \$29,000 water and \$39,000 electric-plant 5 per cent. bonds have been purchased by Townsend Scott & Son, Nelson Cook & Co. and Baker Watts & Co., Baltimore, at \$80,425 for entire issue. Joseph B. Seth is Mayor, and Jas. B. Clark, Town Clerk.

Md., Laurel.—Bids will be received until noon July 20 for \$52,000 sewer, \$23,000 water and \$5000 floating debt 5 per cent. bonds. Geo. W. Waters, Jr., is Mayor.

Md., Rockville.—Bids will be received until noon Sept. 15 for \$58,500 of 5 per cent. Montgomery county bonds; denomination \$1500 and \$1000. Richard T. White, Jr. is Prest. and Berry R. Clark Clerk Board of County Commrs.

Md., Snow Hill.—\$25,000 5 per cent. 25-50-year Worcester county bridge bonds have been purchased jointly by Townsend, Scott & Son and Baker, Watts & Co., Baltimore.

Miss., Clarksdale.—\$100,000 5 per cent. 30-year road and bridge bonds have been purchased by John Nuveen & Co., Chicago, at 101.20.

Miss., Corinth.—Railroad-aid bonds are voted. Address The Mayor.

Miss., Fayette.—\$10,000 Jefferson county road and bridge bonds were purchased by Mrs. Kettie Netter at a premium of \$750.25.

Miss., Friar's Point.—\$100,000 5 per cent. 30-year Coahoma county road and bridge bonds were purchased by John Nuveen & Co., Chicago, at 101.20.

Miss., Greenville.—\$65,000 5 per cent. 35-year school bonds were purchased July 7 by John E. Sutherland, Rialto Bldg., Kansas City, Mo.

Miss., Greenville.—\$65,000 5 per cent. 35-year school bonds have been purchased at \$831.50 premium by Well, Roth & Co., Cincinnati.

Miss., Hattiesburg.—\$5,000 Forrest county school bonds have been authorized by the Board of Supervisors.

Miss., Hattiesburg.—Forrest county has authorized Eatonville to issue \$5000 school bonds. Address Board of County Supervisors.

Miss., Kosciusko.—\$50,000 6 per cent. 10-25-year Dist. No. 1 Attalla county road bonds were purchased July 6 by Merchants & Farmers Bank. J. H. Oliver is Clk. Board of Supervisors, Attalla county.

Miss., Magnolia.—\$20,000 6 per cent. Pike county road bonds have been purchased by Magnolia Bank, Magnolia, and the Provident Savings Bank & Trust Co., Cincinnati, at \$200 premium.

Miss., McComb City.—\$20,000 5 per cent. 1-20-year city hall bonds have been purchased by McColgan Bros. of McComb City; denomination \$200 to \$500; dated May 5, 1914. J. Dock Harrell is City Clerk.

Miss., Noxapater.—Bids will be received until 8 P. M. Aug. 4 for \$14,000 5 per cent. agricultural high school bonds; dated Aug. 1, 1914, and maturing from 1918 to 1934. Address F. M. Glenn, Clerk. Further particulars will be found in the advertising columns.

Miss., Pittsboro.—Road bonds, Beat 1, Calhoun county, are reported sold to a Mr. Cole of Okolona. It is proposed to hold an election in Beat 5 to vote on road bonds. Address Board of Supervisors.

Miss., Weir.—\$5000 6 per cent. school bonds have been purchased at \$15 premium by H. C. Speer & Sons Co., Chicago.

Mo., Palmyra.—\$32,000 light and water bonds are voted. Address The Mayor.

Mo., Sedalia.—Election is to be held July 21 to vote on \$5000 bonds consolidated school Dist. No. 2. Address Board of Education.

Mo., Springfield.—\$70,000 7 per cent. bonds have been purchased by Commerce Trust Co., Kansas City.

Mo., St. Charles.—Election is to be held July 23 to vote on \$90,000 park bonds. Address The Mayor.

N. C., Cherryville.—\$20,000 5 per cent. school bonds have been sold at par. Address J. B. Houser.

N. C., Edneyville.—\$12,000 6 per cent. 30-year township road bonds were purchased by Hanchett Bond Co.

N. C., Greensboro.—\$7500 5 per cent. 30-year bonds Jamestown Special Tax School Dist., Guilford county, have been purchased at par by W. J. Armfield.

N. C., Greensboro.—\$7500 5 per cent. bonds Jamestown Special Tax School Dist., Guilford county, have been purchased at par by W. J. Armfield.

N. C., Kinston.—Bids will be received until 8 P. M. July 24 for \$100,000 5 per cent. 30-year bonds. W. B. Coleman is City Clerk. Further particulars will be found in the advertising columns.

N. C., Louisville.—\$40,000 5½ per cent. 30-year township road bonds have been purchased by the Hanchett Bond Co., Chicago.

N. C., Rich Square.—\$20,000 Rich Square township road improvement bonds are voted. Address The Mayor.

N. C., Statesville.—All bids received July 3 for \$35,000 5 per cent. 30-year school bonds were rejected. C. D. Moore is City Clerk.

Okla., Billings.—\$23,000 water-works and \$7000 light plant bonds are reported voted. Address The Mayor.

Okla., Blackwell.—\$40,000 of bonds are voted to build pavilion in its electric park. Bonds for water-works and electric lights are also to be voted on. Address The Mayor.

Okla., Hewitt.—\$10,000 school Dist. 43, Carter county, bonds were voted June 30. Address County Commrs., Ardmore.

Okla., Wilson.—\$10,000 school-building bonds are voted. Address The Mayor.

Okla., Sapulpa.—Park, sewer and railroad bonds are voted. Address The Mayor.

S. C., Ridgeland.—Plans are being made to call an election to vote bonds for \$10,000 school building. Address The Mayor.

S. C., Woodruff.—\$37,000 water-works and \$23,000 sewerage bonds are voted. J. E. Ezell is Clerk and Treas.

S. C., Woodruff.—\$60,000 sewer and water bonds are voted. Address The Mayor.

S. C., Walhalla.—\$6000 5 per cent. 20-40-year lighting bonds were voted July 6 and will soon be offered; denomination \$100. Address W. C. Hughes, W. B. Craig or G. A. Norman. W. M. Brown is Mayor.

Tenn., Benton.—Election is to be held in Polk county to vote on pike bonds. Address County Commrs.

Tenn., Chattanooga.—Bids will be received until noon July 20 for \$4237.08 6 per cent. 14-year bonds paving Dist. No. 174; dated June 24. T. C. Thompson is Mayor.

Tenn., Cleveland.—\$25,000 pike and \$10,000 school 5 per cent. 30-year Bradley county bonds are to be placed on the market. Address County Commrs.

Tenn., Erwin.—Election is to be held in Unicoi county Aug. 22 to vote on \$100,000 road bonds. Address County Commrs.

Tenn., Henderson.—Election is to be held in August to vote on \$50,000 Chester county road bonds. Address County Court.

Tenn., Henderson.—\$55,000 6 per cent. Chester County Drainage Dist. bonds were purchased by Tom Bank, Henderson, and Hoebler, Cumming & Prudden, Toledo, at par and interest; denomination \$500; maturity 1917 to 1934. J. F. O'Neal is Secy. and Treas.

Tenn., Jonesboro.—Bids will be opened Aug. 15 for \$15,000 6 per cent. 5-20-year bonds voted June 25, 1914, \$12,000 being to pay floating indebtedness and \$3000 for contemplated improvements. Dated July 15, 1914; denomination \$500. Sam Winpatrik is Recorder.

Tenn., Knoxville.—Election is to be held in Knox county to vote on \$100,000 school bonds. Address County Commrs.

Tenn., Loudon.—About Aug. 15 city will open bids for the remaining \$50,000 of an authorized issue of \$200,000 5 per cent. 30-year Loudon county road bonds voted by County Court July 6; denomination \$500 or \$1000. Address C. H. Bacon.

Tenn., Linden.—\$100,000 Perry county railroad bonds are voted. Address County Commrs.

Tenn., Maryville.—\$40,000 Blount county high-school bonds are voted. Election is also to be held to vote on \$300,000 road bonds. Address County Commrs.

Tenn., Sevierville.—\$135,000 5 per cent. Sevier county road bonds have been purchased by Spitzer, Rorick & Co., Toledo, at par.

Tenn., Wartburg.—\$270,000 Morgan county pike bonds are to be issued. Address Board of Pike Commissioners.

Tex., Austin.—The Attorney-General has approved the following securities: \$8000 Dist. No. 25, \$1000 Dist. No. 30, \$2000 Dist. No. 27, \$2500 Dist. No. 10 5 per cent. 10-20-year Ange-

lina county school bonds; \$1000 5 per cent. 10-20-year Van Zandt county common school Dist. No. 6 bonds; \$50,000 5 per cent. 40-year Brazoria County Road Dist. No. 4 bonds; \$17,000 5 per cent. 3-40-year bonds Roaring Springs Independent school Dist.; \$5000 5 per cent. 10-40-year bonds Joaquin Independent school Dist., Shelby county; \$8000 5 per cent. 10-year bonds Jefferson county drainage Dist. No. 3; \$5000 5 per cent. 20-40-year Cooper Independent school Dist. bonds; \$15,000 5 per cent. 5-20-year bonds Fannin county common school Dist. No. 108; \$10,000 5 per cent. 15-40-year Palacios street and bridge bonds; \$9000 5 per cent. 5-20-year bonds Brazoria county common school Dist. No. 7; \$750 Dist. No. 1, \$2500 Dist. No. 54, \$1500 Dist. No. 54 5 per cent. 5-20-year Brown county school bonds; \$45,000 5 per cent. bonds road Dist. No. 3, Victoria county; \$7800 5 per cent. 5-40-year bonds Bosque county common school Dist. No. 3; \$1800 5 per cent. 10-20-year bonds Brath county common school Dist. No. 76.

Tex., Galveston.—\$12,000 bonds Kinkead School Dist., Galveston county, are voted. Address County Commrs.

Tex., Hempstead.—\$20,000 independent school bonds have been purchased by the Hanchett Bond Co., Chicago.

Tex., Houston.—\$10,000 school bonds, Dist. No. 11, voted last April, have been declared void.

Tex., Joaquin.—\$7000 school district bonds are voted. Address Board of School Trustees.

Tex., Lockhart.—Bids were opened July 8 for \$3000 5 per cent. 10-40-year bridge bonds; denomination \$500. Arthur E. Carter is Mayor.

Tex., Livingston.—Election is to be held Aug. 23 to vote on \$25,000 water-works bonds. Address The Mayor.

Tex., Mexia.—It is proposed to issue \$10,000 of school bonds. Address School Board.

Tex., Roston.—\$12,000 independent school district bonds are voted. Address Board of Education.

Va., Barton Heights.—\$25,000 6 per cent. 30-year general improvement bonds were awarded to the Old Dominion Trust Co., Richmond, Va., at 113.05. W. L. Ragland is Mayor, and Thos. Armstrong, Chrmn. Finance Com.

Va., Marion.—Election is to be held in August to vote on \$20,000 water bonds. Address The Mayor.

Va., Petersburg.—Bids will be received until 8 P. M. July 31 for \$10,000 5½ per cent. 10-20-year bonds. Address W. C. Moorman, Recorder.

Va., Pulaski.—Bids will be received until noon Aug. 3 by J. F. Wysox, Treas. Pulaski county, for \$58,000 5 per cent. 5-30-year bonds School Dist. No. 4; denomination \$500; dated Sept. 1, 1914. Further particulars will be found in the advertising columns.

Va., Richmond.—\$85,000 6 per cent. public improvement bonds recently voted have been sold through the Old Dominion Trust Co. for \$93,585.50. W. S. Pettit is Mayor.

W. Va., Grafton.—\$110,000 5 per cent. 10-34-year independent school district bonds have been purchased by Seasongood & Mayer at \$1220 premium. W. M. Watkins is Secy. of Board of Education.

W. Va., Grafton.—\$110,000 5 per cent. 34-year high-school-building bonds have been purchased by Seasongood & Mayer, Cincinnati, at \$1220 premium and accrued interest; denomination \$500; dated July 1, 1914; maturity July 1, 1948. Wm. Watkins is Secy. Board of Education.

W. Va., Huntington.—Election is to be held to vote on \$500,000 water-works bonds. Election may also be called to vote on \$125,000 city hall completion, \$30,000 to \$35,000 fire department equipment, \$10,000 market-house, \$3000 Gamewell police telegraph system and \$20,000 street undergrade crossing bonds. Address Commr. of Finance and Public Utilities.

W. Va., Morgantown.—\$150,000 5 per cent. school district high-school bonds voted May 28 have been purchased by Myer, Deppe & Walter at \$152,620 and interest to date of delivery. Denomination \$1000. W. S. John is secretary district.

W. Va., Richwood.—\$12,000 6 per cent. 10-30-year municipal bonds will be sold at public auction on Aug. 1. A. L. Crag is Mayor and C. A. Orabood Recorder.

W. Va., Williamson.—Bids will be received until July 30 for \$150,000 5 per cent. 10-34-year municipal bonds; denomination \$1000. John S. Hall is Recorder.

W. Va., Williamson.—Election is to be held Aug. 11 in Mingo county to vote on \$500,000 road bonds. Address County Commrs.

W. Va., West Union.—Bids will be received until noon July 27 by J. I. McCormick, Town Recorder, for \$62,000 5½ per cent. 10-34-year grading, paving, sewer, bridge and water-

works bonds; denominations, \$100, \$500 and \$1000; dated July 1, 1914.

W. Va., Woodsdale, P. O. Wheeling.—\$3000 5 per cent. 20-year fire apparatus bonds were voted last March, and of the issue \$6000 are now being offered; denomination \$500; dated Aug., 1914; maturity 1934. Address Geo. J.

## FINANCIAL NOTES

The Bankers' Trust Co., Dallas, Tex., has amended its charter to increase its capital from \$400,000 to \$800,000.

The United States League of Local Building and Loan Associations is to hold its annual meeting in Washington, July 27, 28 and 29.

The Board of Port Commissioners of Jacksonville, Fla., have adopted a resolution to purchase at not more than 105 for the sinking fund as many of the dock and terminal bonds recently issued as the money in the fund will permit. There is now, it is said, \$45,000 available.

The North Carolina League of Building and Loan Associations, which held its annual convention at Wrightsville, N. C., re-elected E. L. Keesler as president and A. C. Craig, secretary, both of Charlotte. Vice-presidents were also elected thus: First, W. E. Sharpe of Burlington; second, John Dunn of Dunn; third, J. B. James of Greenville. Next year the convention will be held at Asheville.

Plans have been completed and stock subscribed to increase the capital of the Bank of Eufaula, at Eufaula, Ala., on January 1 next from \$100,000 to \$200,000. Present officers will generally be officers of the new organization. N. W. Roberts, now cashier, will, however, be second vice-president, and C. E. Boyd of Montgomery, one of the State Bank Examiners, will become cashier. W. Lawrence Wild is president and G. L. Comer, vice-president.

## Bank Statements.

The Mercantile Trust & Deposit Co. of Baltimore publishes its financial statement of June 30, showing total resources of \$15,941,331, which includes loans on approved collateral, \$7,846,498; Baltimore city stocks, \$2,452,498; other stocks and bonds, \$3,245,908; cash, \$1,902,097, etc. Deposits are \$11,217,870. Capital is \$1,500,000; surplus, \$2,700,000, and undivided profits, \$495,709.

The First National Bank of Richmond, Va., reports at the close of business June 30 total resources of \$19,122,798, which includes loans and discounts, \$12,163,121; United States bonds, \$1,865,500; other stocks and bonds, \$817,604; cash and due from banks, \$4,200,282. Total deposits are \$13,052,329; capital, \$2,000,000; surplus, \$1,000,000; undivided profits, \$99,360.

The First National Bank of Baltimore reports on June 30 total resources \$9,598,119, which includes loans and discounts, \$4,793,529. Total deposits are \$7,122,755. Capital is \$1,000,000; surplus, \$350,000; undivided profits, net, \$62,163.

The National Exchange Bank of Baltimore's statement of June 30 shows total resources \$7,685,811. Loans and discounts therein are \$4,016,024; United States bonds, \$1,086,500; cash and due from reserve agents, \$1,324,389. Deposits are \$4,583,007; capital, \$1,000,000; surplus and undivided profits, \$717,118.

## American Bank Reporter.

The desk edition of the American Bank Reporter for June, 1914, has been issued. This admirable reference book contains a mass of valuable information for all who have relations with financial institutions, and its pages are approximately 3000 in number. Its arrangement is excellent, so that whenever it is necessary to consult it the reader may quickly reach that which he desires, and, notwithstanding its completeness, its dimensions are appropriate, size being kept down by the use of thin but strong paper. The presswork is good, and the binding in leather is superior. The volume is from the Steurer Publishing Co., 5 Beekman street, New York.



**Merchants-Mechanics National Bank**  
South and Water Sts. BALTIMORE MD  
DOUGLAS H. THOMAS President.  
JNO B. RAMSAY V-P and Chm. Bd of Dir  
WM. INGLE Vice-President.  
JOHN B. H. DUNN Cashier.  
Capital \$2,000,000 Deposits \$21,670,000  
Surplus and Profits \$2,175,000  
Accounts of Banks, Bankers, Corporations and Individuals solicited.  
We invite correspondence.

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DEALT IN  
**F. J. LISMAN & CO.**  
Specialists in Steam R. R. Securities  
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as they have been manufacturing such machinery for thirty years, and can give entire satisfaction. Their address is

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Capital, \$1,000,000  
August 9th, 1913, Surplus and Profits, \$764,091.00  
OFFICERS  
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Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

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Wilmington, Delaware  
INCORPORATING under broad, liberal, safe and stable Delaware laws. A fully equipped department for proper organization and registration of corporations.  
BANKING AND TRUST department gives special attention to out of town customers' accounts.  
TITLE DEPARTMENT examines and guarantees title to realty throughout Delaware.  
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**FIRST NATIONAL BANK**  
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Capital and Surplus, - - \$3,000,000  
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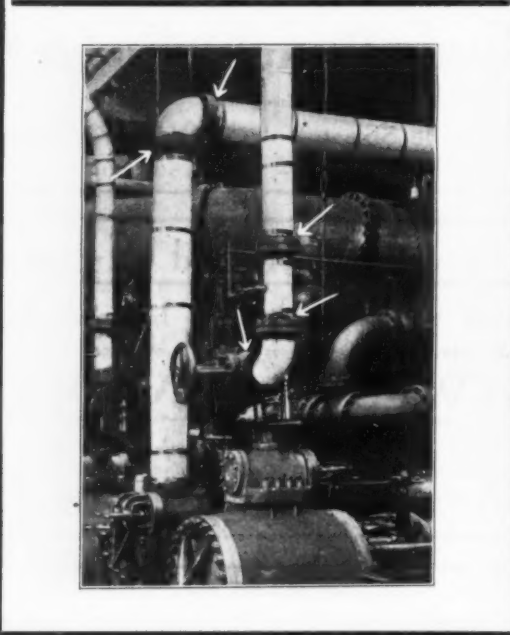
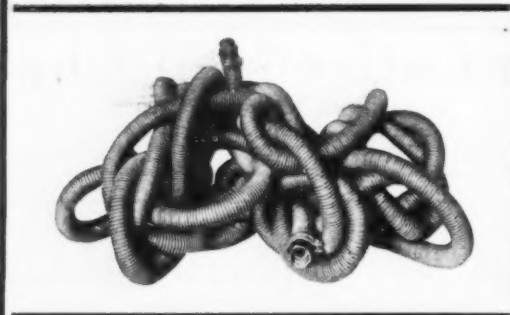
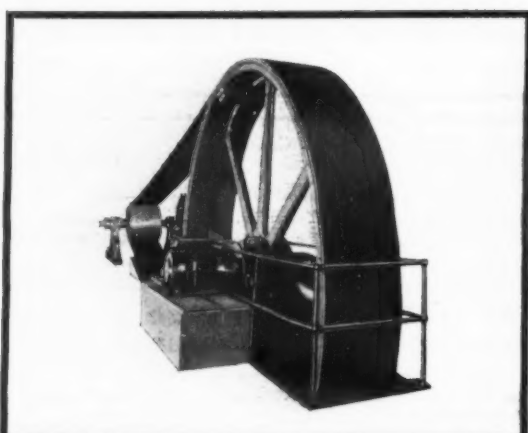
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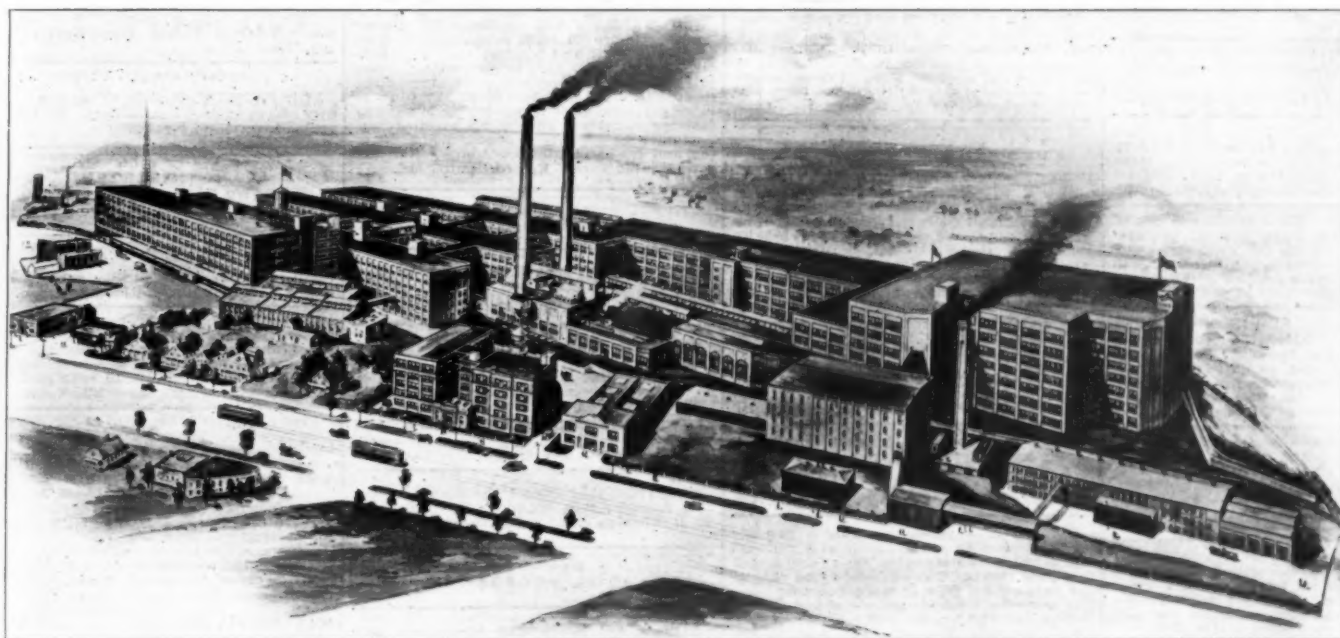
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**YOUNG MEN** familiar with mill supply and jobbing trade to represent manufacturer of new and successful line of patented tools. Give experience and territory covered. No. 1568, care Manufacturers Record, Balto., Md.

**ARE MANUFACTURING** Hoover Disc Grinder and Hoover Axle Set, both of which will eventually be in every blacksmith shop. Want local representatives to handle on commission and manufacturer's agent to place with their salesmen. Patents for both of these also for sale. Address The Hoover Manufacturing Co., Beloit, Kansas.

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**WANTED**—By manufacturers' agent handling building specialties, several additional lines. Address No. 1576, care Manufacturers Record, Balto., Md.

**WANTED**—Live agents on a commission basis to handle full line of vises and other machinists' and plumbers' tools. Good opportunity for men calling on the shops and industries of the South and Southwest. Address "Vises," care Manufacturers Record, Balto., Md.

**WANTED**—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

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**MASTER MECHANIC** wishes to change; understands construction and sawmilling; good reference; will go anywhere. Address No. 1575, care Manufacturers Record, Balto., Md.

**EFFICIENCY ENGINEER** desires position vicinity Baltimore, Md., with industrial firm. Designing, systematizing, power testing. Member Efficiency Society of New York. Address No. 1559, care Manufacturers Record, Balto., Md.

**CONTRACTORS' ENGINEER**—13 years' responsible charge large general contract work; 4 years' charge of estimates, contracts, office and field organizations. Will make investment with position as executive. No. 1554, care Manufacturers Record, Balto., Md.

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**FOR SALE**—One-half interest in a good-paying manufacturing business. Will take \$10,000 to handle. This is a fine proposition for a live wire who will take over management of plant. James A. Lewis & Co., Mobile, Ala.

**OWNER** of a patent covering a gasoline engine desires to get in touch with railroad and interurban companies, gas-engine manufacturers and builders of freight and passenger cars with a view to manufacturing gasoline propelled cars for passenger and freight service, as the engine indicates great efficiency for this class of work. Address No. 1572, care Manufacturers Record, Balto., Md.

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This valuable clay bed, with a manufacturing site at Chester, for sale reasonable. The manufacturing site, consisting of between 3 and 4 acres, is on A. C. L. R. R. at junction of Tidewater & Western R. R., affording splendid shipping facilities to North or South by A. C. L. N. & W., S. A. L. T. & W., or by water. With proper development should prove a good money-maker. Full particulars upon request. Address Central Realty Co., Richmond, Va.

**FOR SALE, OR PARTNER WANTED**—Manganese, iron and mountain of ballast or concrete rock on R. R., at depot; 190 acres land; we can get more. J. C. Clay, Gladys, Va.

**INFORMATION** any subject; coal, iron and lumber production; exports and imports; Gov't bids; legislation; trade opportunities; statistics, etc. Also daily and weekly news service. Reports \$1. General Information Bureau, Box 263, Washington, D. C.

**WILL SELL** 2080 acres good land North-east Mississippi, \$10 an acre, or prefer to borrow \$10,000 ten years, 5 per cent. interest. Ike A. Chase, Memphis, Tenn.

**WANTED**—To connect with individuals who will be willing to invest \$15,000 in a very successful graphite company in the best section in the South. The company is most successful in selling its product, and with additional capital can enjoy increased sales at a large profit. The best references can be given. Address P. O. Box 732, Atlanta, Ga.

**FOR SALE, or will exchange** for timber lands or improved farm lands, half interest in planing mill and woodworking establishment with lumber yard in connection; doing \$65,000 annual business and increasing; plant located in heart of a live Kentucky town of 10,000 inhabitants; surrounded by a wealthy farming country. This is an excellent opportunity to get into a paying manufacturing and lumber business. Address No. 1560, care Manufacturers Record, Balto., Md.

## MISCELLANEOUS

**WANTED**—The name and address of manufacturers of instruments for locating hidden treasures. G. B. Hiett, Atlanta, Ga.

**WANTED**—Information of the firm of Henry Fink & Son and the operating headquarters of this concern. Any information as to the present domicile of this firm, please send to Box 38, Alexander City, Ala.

## DOORS

**WANTED**—To contract the output of our door factory; capacity, about 100 doors daily. W. R. Flowers Lumber Co., Dothan, Ala.

## HOTEL PROPOSITION

**FOR SALE**—A 70-room hotel, one nice 8-room dwelling, three 2-room cottages, one with 4 rooms, 80 rooms furnished, water, sewerage, baths, electric lighted (with my own plant, which can be operated for 10 cts. per hour) (200 lights), in small village in western N. C., on the Sou. R. R. to Asheville; 1200 ft. elevation; within 100 yds. of depot, where all trains stop for water; with fine mineral waters, noted for half century for their medical virtue; with 12 acres nice land; now having a growing patronage as summer resort, and could be made a nice winter resort. A splendid chance to party meaning business. I want to quit and rest. I will make good terms. Write, or better come and see for yourself. Wm. Jeff Davis, owner and proprietor, Connelly Springs, N. C.

## INDUSTRIES WANTED

### MISCELLANEOUS

**FREE SITE** given for factory; electric power cheap; no city tax; 2 railroads; plenty of labor. Berkeley Land Company, Martinsburg, W. Va.

**NORTH EAST, MARYLAND**, has free land and other lend-a-hand inducements to offer for new industries. Midway between Baltimore and Philadelphia. Pennsylvania and B. & O. Railroads. Write to the Board of Trade, North East, Md.

**BLUEFIELD, WEST VIRGINIA**, the gateway to the vast Pocahontas coal fields, and the distributing point for half a million contented laborers, needs an overall factory, needs a mine implement factory and needs a brick plant. Address C. T. Boykin, Secretary Bluefield Chamber of Commerce.

**AN UNUSUAL OFFER**—The owner of a 26-mile railroad will give a 15 per cent. interest in the road to a manufacturing concern locating on the line, whose freight will be substantial. A splendid site on a river, capable of developing 1200 continuous horsepower, will also be donated. The road has good main line connections with generous percentages. It is earning a surplus and is in a rapidly developing territory rich in possibilities. References will be required with answers to this advertisement. Address No. 1555, care Manufacturers Record, Baltimore, Md.

## INDUSTRIAL PLANTS FOR SALE

**MILLWORK PLANT AND PLANING MILL** FOR SALE; practically new; in thriving town of 16,000 inhabitants; water and rail facilities. Pleased to correspond or interview interested parties. Address No. 1561, care Manufacturers Record, Balto., Md.

### LIME PLANT

**FOR SALE**—Eight-kiln lime plant in East Central Tennessee for sale; owner wants to convert into cash; now operating; gravity transportation from quarry to kilns; favorable freight rates for wide territory, including parts of Florida and Louisiana and North Carolina. Address E. H. Pringle, Jr., Charleston, S. C.

### PRINTING PLANT

**FOR SALE OR LEASE**—Complete printing plant in good live town. Address Bank of Mulberry, Mulberry, Fla.

### DISTILLED WATER AND BOTTLING PLANT

**FOR SALE**—Distilled water and bottling plant, \$60,000, Houston, Texas; well established; \$25 daily profits; fine prospects. For particulars address A. J. Elliott, 1919 Crawford St., Houston, Texas.

### GREY IRON FOUNDRY

**FOR SALE**—Grey Iron Foundry; fully equipped; a good proposition to a practical man. Address Vulcan Iron Works, Houston, Tex.

### BROOM HANDLE FACTORY

**FOR SALE**—A complete broom-handle factory; have splendid machinery. G. W. Atherton, Livermore, Ky.

## MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

**202½ ACRES**, kaolin deposit between 35 and 50 acres, \$15,000. 202½ acres Fuller's earth deposit, \$15,000. Southern Ins. & Realty Co., Georgia Life Bldg., Macon, Ga.

**IN** the territory near Semmes, Alabama, within 20 miles of Mobile, we have several thousand acres of good land for sale at extremely low price. This is where Northern oil men are now wild-cattling, with good prospects for oil. W. W. Woodruff, Mobile, Ala.

**FOR SALE ON REASONABLE TERMS**: 25,000 acres, Escambia county, Alabama, especially adapted for colonizing. 15,000 acres highest grade Southern hardwood timber, located Southern Mississippi. 14,000 acres, located in Southern Alabama; about 30,000,000 ft. L. L. yellow pine on 7500 acres of this. Land is especially desirable for agricultural purposes.

24,000 acres coal and timber land, located on Frisco Railroad west of Birmingham. 5000 acres of hardwood timber, located on the Alabama River not far from Mobile. 5000 acres, especially desirable for citrus fruit growing, including a townsit located just across the bay from Mobile.

10,000 acres, located in North Baldwin, especially adapted for a ranch. I own and control all of the above-described properties, and in addition I handle properties as a broker, so that I am in a position to meet most any requirements in Southern acreage property. Address H. H. Wefel, Jr., Mobile, Alabama.

### SILICA SAND

**SILICA SAND FOR SALE**—Very large deposit of pure white silica sand, with mill producing 150 tons per day; sand analyzes 99.86 pure; ideal place for silicate of soda works or chemical works; will bear closest investigation. J. F. Ballou, Millington, Ill.



# Classified Opportunities

## BRICK CLAY PROPERTY

**BRICK CLAY.**—Attention, Brick Men! Have located within five miles of Atlanta large supply fine brick clay; excellent railroad facilities. This property is splendid location for Southern market. Can be bought reasonably, considering actual value. Estate of James E. Lynch, P. O. Box 519, Atlanta, Ga.

## TIMBER LAND FOR SALE

**TWO HUNDRED THOUSAND (200,000)** acres timber land in Florida, containing over 5,000,000 feet of original growth pine. Has been cruised by expert; placed on the market for the first time at a very low figure. South Carolina timber; 15,000 acres on the Atlantic Coast Line and Southern Railroad. Estimated 65,000,000 feet short-leaf pine. For price and full particulars apply to Johnson's American and Foreign Real Estate Exchange, 945 Pennsylvania Avenue, Washington, D. C.

**FOR SALE**—32,000 acres yellow pine De Soto Co., Fla.; will cut about 70,000,000 feet pine and 5,000,000 feet cypress. Reasonable terms. Address Box 135, Wauchula, Fla.

**NO. 547—VIRGINIA TIMBER TRACT**—100 ACRES—\$3500; located in Albemarle county on a good road; 2 miles from railroad; estimated to cut over 1,000,000 feet of oak, pine, poplar and chestnut. For particulars regarding this and other timber and mineral tracts and farm lands inquire of Edward S. Wilder & Co., Charlottesville, Va.

**HARDWOOD TIMBER TRACTS**, 1000 acres up, direct from owners; cut 4000 feet white oak to acre; \$3 acre in fee; near proposed railroad, Newton county. Also have cheap stock and colonization tracts. Fredricks, Springdale, Arkansas.

**5400 ACRES** of virgin hardwood timbered land in East Tennessee, \$10 per acre; would exchange. Farm Realty Co., 825 Jefferson Co. Bank Bldg., Birmingham, Ala.

**A FEW GOOD TRACTS** in Southern States at prices attractive for investment or operation. Hemlock, spruce, oak, poplar, cypress. Real Estate Investment Co., 816 Connecticut Ave., Washington, D. C.

**FOR SALE**—5000 acres of virgin hardwood timber near the Texas & Arkansas line. Address F. M. Greene, Atlanta, Texas.

**TIMBER TRACTS** located for manufacturers or investors by practical timbermen. Correspondence solicited. Jo A. Parker, Parma, Mo.

**WE HAVE 7160 acres** timber land in Levy County, Florida. Will cut 10,000,000 feet of Pine and Cypress. Price \$4 per acre cash. Write Waring & Edwards, Lakeland, Florida.

## CROSSTIES FOR SALE

**FOR SALE**—25,000 white oak crossties, 6x8—8", hewn, ready for shipping. J. M. Shumaker, Jackson, Miss.

## FARM AND TIMBER LANDS

**FOR SALE**—Farm and Timber Land in Southeast Georgia. Land produces two and three crops per year. Especially adapted to growing cotton, corn, alfalfa and, in fact, anything that grows in the Southern States. If interested, write us for full information. South Georgia Farms & Realty Co., Fitzgerald, Ga.

**7240 ACRES** on S. A. L. Railroad will cut as follows:

2,500,000 feet pine at \$2.50 M.	\$6,250.00
3,000,000 feet hardwood at \$2 M.	6,000.00
2,000,000 feet large cypress at \$3 M.	6,000.00
40,000 cypress ties at 10c. each.	4,000.00
10,000 cords of wood at 25c. cord.	2,500.00
10,000 cypress poles at 25c. each.	2,500.00

Total for timber.....\$27,250.00  
Now, listen! Owing to other interests that will not let owners attend to this tract, we can sell this tract for \$27,500. When timber is taken off you will have as fine cattle ranch and farming land as you want. Remember, \$27,500 in fee. Southern Insurance & Realty Co., 314 Ga. Life Bldg., Macon, Ga.

**FOR SALE**—About 20,000 acres of land in fee in Eastern North Carolina, in close proximity to railroad. This land contains about 60,000,000 feet of pine and cypress timber. The land without the timber is splendid for farming. With the timber off is worth the price asked for the whole. Timber, Box 1089, Norfolk, Va.

**FIFTEEN THOUSAND FOUR HUNDRED ACRES** of good truck and citrus-fruit land, located in Santa Rosa county, twenty miles east of Pensacola. Seven thousand acres of this land is covered with a heavy growth of long-leaf pine, which will cut about twelve million feet. Price three dollars per acre. W. H. Upp, Box 331, Pensacola, Fla.

**FARM AND TIMBER LAND** on the easy-payment plan; some small improved tracts; good for cotton, corn, alfalfa and grain. Prices from \$4 to \$25 per acre. W. Knight, Real Estate Dealer, Bigelow, Arkansas.

## COLONIZATION LANDS

**COLONIZATION**—One of the best tracts of land in East Texas, suitable for colonization or investment. For particulars write W. L. Bostick & Son, Tyler, Texas.

## OIL AND FARM LAND

**AN OIL WELL** and fine alfalfa farm of 170 acres; well improved; fine water; all fine black bottom land; on railroad; have loading switch for alfalfa, which will also be used for shipping oil when well now drilling is brought in; write for particulars and price; land worth the money, to say nothing of oil prospects. Also, 730-acre fine corn and alfalfa farm at a bargain; oil prospect; very fine. W. P. Poland, Ardmore, Okla.

## MOUNTAIN ESTATE

**MOUNTAIN ESTATE**, 30 miles from Asheville, 5 miles from Southern Railway, elevation 2000 to 3000 feet, mild climate, pure air, cold spring water, running brooks; comfortable log house of 4 rooms, stables and outbuildings; 20 acres in cultivation; 100 bearing apple trees, peaches, plums, grapes, blackberries, vegetable and flower garden; 2500 acres hardwood timber, oak, poplar, hickory, chestnut, pine, etc.; also, rhododendron, kalmia, azalea, dogwood, galax, trailing arbutus, mistletoe, squirrels, quail, wild turkeys, coons, possums. \$20,000; easy terms. Address Wm. M. Pratt, Marion, N. C.

## FRUIT, FARM AND TRUCK LANDS

### ALABAMA

**FOR SALE**—2965 acres in Tallapoosa county, Alabama; 1000 acres river bottom; pays 12 per cent. on investment; \$15 per acre. For particulars write Charles A. Stewart, Temple Court, Chattanooga, Tennessee.

### FLORIDA

**THE PALATKA FARMS COMPANY** of Palatka, Florida, offers to homesteaders the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or that for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 2 miles of Palatka, an up-to-date city of 8000 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Becks, Palatka, Fla.

**PINEY POINT**, the Deep-Water City. Other towns and would-be towns have to fight and wait for appropriations to get deep-water facilities.

Nature made it for us, and in addition gave us immunity from frost, for just north of Piney Point is the broad expanse of Tampa Bay.

Teracela Island and the Manatee River towns and farms have good water protection, but not deep water. We have both. Also an abundant supply of artesian water for all purposes.

Nature laid the foundation. We are doing the rest. Will you join us? The Piney Point Land & Improvement Co., Palmetto and Piney Point, Fla. Jno. W. Jackson, Manager.

**THREE MONTHS FREE**—Subscription to the Indian River Farmer. For truckers, fruit growers, general farmers, and folks who want to know about Florida. Address Indian River Farmer, Dept. "V-1," Vero, Fla.

**FOR SALE**—100 acres choice fruit and garden land near depot; brick road being built will run close by; easy reach of Tampa, also Plant City; divided into 5-acre lots, each fronting 40 ft. road. N. D. Smith, 913 Florida Ave., Tampa, Fla.

### MARYLAND

**FOR SALE**—Productive Carroll County, Md., farm; 350 acres, near Railroad Station; stone dwelling, necessary outbuildings, all in good order. Well watered; fruit. Complete equipment if desired. Suitable for dairy, stock, fruit or general farming. D. Sterrett Gittings, Real Estate Broker, 401 Maryland Trust Bldg., Baltimore, Md.

### NORTH CAROLINA

The finest farm land in Moore county, the newly discovered tobacco field, will be sold at cost in any acreage by railroad owning the tract and anxious to develop territory; cleared and uncleared portions. Additional houses will be erected and long terms given. This is the best opportunity to get these lands cheap. For particulars write J. R. McConnell, Land and Industrial Agent, R. & C. Ry., Carthage, N. C.

### TEXAS

**100-ACRE FARM**, well improved, high state of cultivation, 4 miles Riviera; best section South Texas; part cash, part trade or long time. Hal Runnels, Riviera, Tex.

### VIRGINIA

**FOR SALE**—4300 acres good undeveloped farming and orchard land; good soil and convenient to railroad. Price \$5 per acre. Lane-Harris Corporation, Altavista, Va.

**FOR SALE**—100-acre farm, 80 acres timber, \$40 acre; 5 miles from Richmond, Va.; R. R. station 1/2 mile; street car walking distance. Address R. C. Wirth, Indianapolis, Ind.

**FARMS FOR SALE**—Large list Northern Virginia grazing, grain, fruit and poultry farms; colonial estates; \$500 to \$50,000; catalogue. B. F. Perrow, Remington, Virginia.

**VIRGINIA**, the ONLY just right climate. Elegant farms ten to thirty dollars acre. One-third cash, balance when convenient. J. E. Barrett, Carrsville, Va.

## MACHINERY AND SUPPLIES

**FOR SALE**—Five-ton champion horse road roller. Will sell cheap to quick buyer. Address No. 1564, care Manufacturers Record, Balto., Md.

**32 H. P. FAIRBANKS-MORSE STATIONARY GASOLINE ENGINE**, practically as good as new. Cheap. Geo. W. Wills, Canal Dover, Ohio.

## WAGONS FOR SALE

**WAGONS FOR SALE**—Ten Troy dump-bottom reversible traction wagons, 3 1/2-yard, with 10-inch tires; have been used four months. Geo. G. Henderson, care Manufacturers Record, Balto., Md.

## PATENTS AND INVENTIONS

**INVENTIONS** developed by practical manufacturers. We have designed and manufactured the simplest and most complicated devices. References furnished. Russell Machine Co., Live Oak St., Dallas, Texas.

## PATENTS FOR SALE

**FOR SALE**—Round-bottom paper-bag invention; patent applied for; much more convenient and useful than the old flat and square bags. Address Box 26, Coleman, Tex.

## PATENT ATTORNEYS

**PATENTS**—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

**EUGENE C. BROWN, ENGINEER AND PATENT LAWYER**, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my especial qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

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**PATENT YOUR INVENTION**—Send sketch for free expert search and report as to patentability. Books on inventions and patents, and book of references from congressmen, manufacturers, bankers and inventors, sent free. John S. Duffie & Co., Patent Attys., 629 F St. N. W., Wash., D. C.

**PATENTS THAT PROTECT AND PAY**. Advice and books free. Highest references. Best results. Promptness assured. Send sketch or model for free search of Patent Office records. Trade-marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

**PATENT YOUR IDEAS**—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F St., Washington, D. C.

**PATENTS** secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$15,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.



## BRASS WORK

For Theatres, Churches, Offices, etc.

Hand Rails, Push Plates, Kick Plates  
Grilles, Frames, Easels

## WINDOW DISPLAY FIXTURES

High-Class Workmanship. Low Prices

**THE NEWMAN MFG. CO.** ESTABLISHED 1882  
717-721 Sycamore St. Cincinnati, Ohio  
BRANCH FACTORIES—101 Fourth Ave., NEW YORK, N. Y. 198 W. Lake St., CHICAGO, ILL.



## HOTEL DEMPSEY MACON, GA.

European Plan. 225 Modern Rooms.  
The Only Fireproof Hotel in Macon.

Windows screened throughout.

The Restaurant a Special Feature.

RATES \$1.00 AND UPWARDS.

With private Bath \$2.00 and upwards.

**HOTEL DEMPSEY COMPANY**  
J. M. HEMPSTED, Mgr.

## THE HAMMOND HOTELS THE HOTEL ESSEX

Opposite South Terminal Station  
BOSTON, MASS.

European Plan.  
Rates Moderate.  
Absolutely Fireproof.

Free Transfer Baggage from and to Station.  
Terminal of Trains from South and West.

DAVID REED, Manager

American and European Plans

Open All the Year Around

## DE SOTO HOTEL TAMPA, FLORIDA

New, Spacious and Airy. All Modern Conveniences. Two Blocks from the  
Business Centre. Suites of Any Size on Short Notice.

WRITE OR WIRE FOR RESERVATIONS

W. L. PARKER, Manager

Western Union Office in Lobby

# PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

## GOVERNMENT PROPOSALS

**PROPOSALS FOR CENTRIFUGAL PUMPS,** Cast-iron Pipe Fittings, Venturi Meters, Fuse Panels, Electric Cable, Galvanized Conduit, Check Valves, Steel Angles, Cardboard, Paper, Crude Carbolic Acid, Caustic Soda and Rosin. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10.30 A. M. August 3, 1914, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 582) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. P. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

**TREASURY DEPARTMENT,** Supervising Architect's Office, Washington, D. C., July 13, 1914. Sealed proposals will be opened in this office at 3 P. M. August 2, 1914, for the construction, complete (including mechanical equipment, interior lighting fixtures, and approaches), of the United States Postoffice at Bedford, Pa. The building is one story and basement, with a ground area of approximately 4720 square feet; stone facing; composition roof; first floor of fireproof construction. Drawings and specifications may be obtained from the custodian of site at Bedford, Pa., or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

**TREASURY DEPARTMENT,** Supervising Architect's Office, Washington, D. C., June 30, 1914. Sealed proposals will be opened in this office at 3 P. M. August 12, 1914, for the construction, complete (including mechanical equipment, interior lighting fixtures, and approaches), of the United States postoffice at Georgetown, Ky. Two-story and-basement building; ground area, 4800 square feet; fireproof construction; stone facing; composition roof. Drawings and specification may be obtained from the custodian of site at Georgetown, Ky., or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

**TREASURY DEPARTMENT,** Supervising Architect's Office, Washington, D. C., June 30, 1914. Sealed proposals will be opened in this office at 3 P. M. August 4, 1914, for the construction, complete (including mechanical equipment, interior lighting fixtures, and approaches), of the United States postoffice at Wytheville, Va. The building is two stories and basement, with a ground area of approximately 4100 square feet; brick facing; tin and composition roof; first floor of fireproof construction. Drawings and specifications may be obtained from the custodian of site at Wytheville, Va., or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

**TREASURY DEPARTMENT,** Supervising Architect's Office, Washington, D. C., June 30, 1914. Sealed proposals will be opened in this office at 3 P. M., July 23, 1914, for the construction of proposed quarters for Stamp Division, Internal Revenue Commissioner's Office, Auditors' Building (old Bureau of Engraving and Printing), Washington, D. C. Drawings and specifications may be obtained at this office in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

**MISSISSIPPI RIVER Commission,** Fourth District, U. S. Engineer Office, Queen and Crescent Building, 346 Camp Street, New Orleans, La., July 3, 1914.—Sealed proposals for constructing and delivering the steel hull sternwheel towboat Chalmette will be received at this office until 11 o'clock A. M. August 3, 1914, and then publicly opened. Information on application. C. O. SHERRILL, Major, Engineers.

**U. S. ENGINEER OFFICE,** Galveston, Tex., July 13, 1914. Sealed proposals for dredging at Port Aransas, Tex., will be received at this office until 12 M. August 12, 1914, and then publicly opened. Information on application. C. S. RICKE, Lieut.-Col., Engrs.

**U. S. ENGINEER OFFICE,** Room 309 Custom-house, Baltimore, Md., July 9, 1914. Sealed proposals for dredging in Broad Creek, Md., will be received at this office until 2.30 o'clock P. M. July 24, 1914, and then publicly opened. Information on application. LANSING H. BEACH, Col., Engrs.

**MISSISSIPPI RIVER COMMISSION,** Fourth District, U. S. Engineer Office, Queen and Crescent Building, 346 Camp Street, New Orleans, La., July 13, 1914. Sealed proposals for constructing and delivering one steel barge will be received at this office until 11 o'clock A. M. August 12, 1914, and then publicly opened. Information on application. C. O. SHERRILL, Major, Engineers.

## PROPOSAL ADVERTISING INFORMATION

**RATE:** 20 cents per line per insertion.

**PUBLICATION DAY:** Thursday.

**FORMS CLOSE** 9 A. M. Wednesday. Copy received later cannot be published until issue of following week.

**NIGHT LETTER:** When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

### THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

### BOND OFFERINGS

#### \$12,000 6% Bonds

The Waynesboro Separate School District will sell \$12,000 worth of bonds for erection of school building, running 20 years, at 6 per cent. optional after 10 years. Bids received until 2 o'clock P. M. Tuesday, August 4th, 1914. Address: W. S. DAVIS, City Clerk, Waynesboro, Miss.

#### \$14,000 5% Bonds

Sealed bids will be received by the town of Noxapater, Miss., until 8 P. M. August 4, 1914, for the purchase of \$14,000 Agricultural High School Bonds. Said bonds to be dated August 1, 1914, bearing 5 per cent. interest, payable semi-annually, and maturing from 1918 to 1934. A certified check for 4 per cent. of face value of bonds bid for will be required of each bidder. The Board of Aldermen reserves the right to reject any and all bids. Address: F. M. GLENN, Clerk, Noxapater, Miss.

#### \$40,000 5% Good Roads Bonds

Sealed bids solicited by the Commissioners of Good Roads District No. 4 of the State of Tennessee on \$40,000 good roads, coupon 5 per cent. annual, bonds, maturing 30 years, but containing an option provision making them redeemable after ten years, to be opened at 2 o'clock Saturday, August 8, 1914, in Halls, Lauderdale County, Tennessee. A certified check for \$500 must accompany bid. J. M. PARRISH, Chairman Board of Commissioners.

#### Sale of \$1,000,000 6% Drainage Bonds

Under authority of and in compliance with the provisions of the Act of the Legislature of Florida, Session 1913, Chapter 6456, Laws of Florida, the Board of Commissioners of Everglades Drainage District of Florida propose to offer for sale one million dollars six per cent. Drainage Bonds, and will receive sealed bids at their office in the State Capitol, Tallahassee, Florida, for the purchase of same on or before 10 o'clock A. M. Thursday, August 20, 1914. The Board reserves the right to reject any or all bids. For full information address: J. STUART LEWIS, Secretary, Tallahassee, Fla.

#### \$100,000 Bridge Bonds

State of Mississippi, Chickasaw County. } Houston, Miss.

Notice is hereby given that the Board of Supervisors of said county and State will receive sealed bids until 12 o'clock M. on Monday, the 3d day of August, 1914, for the purchase of one hundred thousand dollars (\$100,000) in bonds of the county for the purpose of constructing bridges of the county. Said bonds to mature in 20 years, bearing interest at a rate not exceeding 6 per cent. per annum, payable semi-annually on the first day of February and August in each year. Said bonds to be dated August 1, 1914, and shall be non-optional. Such bonds to be lithographed with interest coupons attached, and shall be in denominations of \$500 each, and shall be prepared and issued in accordance with Section 11 of Chapter 233 of the laws of Mississippi, 1912. That bids will be received on said bonds bearing 5 per cent., 5 1/2 per cent. and 6 per cent. interest, and that bids will be received on said bonds in lots of \$25,000, and then on the entire issue. That the successful bidder shall furnish blank lithographed bonds without extra cost to the county, each bid to be accompanied by certified check for \$5000. That in the event satisfactory bids are not received, that the same will be sold at public outcry. The Board reserves the right to reject any and all bids. Witness my signature this 10th day of July, 1914.

H. E. BRANNON, Chancery Clerk.

### Bonds For Sale

Rockville, Md. The County Commissioners for Montgomery County, Maryland, will receive sealed bids for the purchase of 22 Montgomery County Bonds of \$500 each up to 12 o'clock noon on the 28th day of July, A. D. 1914, at which time the bids will be opened by said Commissioners and the sale consummated to the highest bidder for cash if, in the opinion of the said County Commissioners, such highest bid be an adequate price for said bonds.

These bonds are in a series of 22 bonds of \$500 each, aggregating \$11,000 and numbered from one to twenty-two, both inclusive, and two of said bonds being numbered one and two, both being payable one year after the date thereof, and two of said bonds in order of their number being payable each year until the entire issue of twenty-two are fully paid.

These bonds bear interest at the rate of 5 per centum per annum.

Said interest being payable semi-annually on the 1st day of August and the 1st day of February in each year until the payment of the principal sum.

The principal and interest being payable at the Farmers' Banking & Trust Company of Montgomery County at Rockville, Maryland.

Each bid must be accompanied with a certified check for Two Hundred Dollars, made payable to the County Commissioners of Montgomery County, Maryland.

RICHARD T. WHITE, JR., President of the Board of County Commissioners for Montgomery County, Maryland. BERRY E. CLARK, Clerk to the County Commissioners for Montgomery County, Maryland. JOHN A. GARRETT, Solicitor.

### City of Pensacola (Florida) \$400,000 4 1/2% Dock and Belt Railroad Improvement Bonds

Sealed bids will be received by the Board of Commissioners of the City of Pensacola, Florida, from July 15, 1914, until August 15, 1914, at 12 o'clock noon, for the purchase of all or any part of four hundred thousand dollars (\$400,000) City of Pensacola Dock and Belt Railroad Improvement Bonds, which shall be paid for upon delivery to the purchaser on the 1st day of September, 1914, at any national bank in the city of Pensacola, in which the purchaser shall designate in his proposal. Said bonds being of the denomination of one thousand dollars (\$1000) each, dated October 1, 1913, maturing October 1, 1943, numbered 1 to 400, both inclusive, bearing interest at the rate of 4 1/2 per cent. per annum, payable semi-annually, and the principal and interest are payable in gold coin at the office of the United States Mortgage & Trust Company, in the city and State of New York. The bonds will be engraved under the supervision of and certified as to genuineness by the United States Mortgage & Trust Company of New York, and the legality of the bonds will be approved by Messrs. Dillon, Thomson and Clay, attorneys, of New York, whose opinion as to the legality, or a duplicate thereof, will be delivered to the purchaser or purchasers.

Each bid must be made on a blank form of proposal furnished by the city of Pensacola, and must be accompanied by a duly certified check on one of the banks of the city of Pensacola for 2 per cent. of the par value of the bonds bid for. The bid must be in a sealed envelope marked "Bid for Dock and Belt Railroad Improvement Bonds," and addressed to the Board of Commissioners of the City of Pensacola, Florida, and no bid will be considered that is not received at the office of the Mayor at the City Hall in the city of Pensacola by or before 12 o'clock noon on August 15, 1914, at which time and place all bids will be publicly opened and read.

The right is reserved to reject any and all bids. For further particulars address the United States Mortgage & Trust Co. or the undersigned.

A. GREENHUT, Mayor of the City of Pensacola, Florida. Attest: C. W. EGGART, City Clerk.

### Bonds For Sale

Rockville, Md. The County Commissioners for Montgomery County, Maryland, will receive sealed bids for the purchase of 15 Montgomery County Bonds of \$1000 each up to 12 o'clock noon on the 28th day of July, A. D. 1914, at which time the bids will be opened by said Commissioners and the sale consummated to the highest bidder for cash if, in the opinion of the said County Commissioners, such highest bid be an adequate price for said bonds.

These bonds are in a series of 15 bonds of \$1000 each, aggregating \$15,000 and numbered from one to fifteen, both inclusive, and one of said bonds being numbered one, and being payable one year after date thereof, and one of said bonds in order of their number being payable each year until the entire issue of fifteen are fully paid.

These bonds bear interest at the rate of 5 per centum per annum, said interest being payable semi-annually on the 1st day of August and the 1st day of February in each year until the payment of the principal sum.

The principal and interest being payable at the Farmers' Banking & Trust Company of Montgomery County at Rockville, Maryland.

Each bid must be accompanied with a certified check for Two Hundred Dollars, made payable to the County Commissioners of Montgomery County, Maryland.

RICHARD T. WHITE, JR., President of the Board of County Commissioners for Montgomery County, Maryland. BERRY E. CLARK, Clerk to the County Commissioners for Montgomery County, Maryland. JOHN A. GARRETT, Solicitor.

### \$58,000 Pulaski Co. (Va.) School District No. 4 Bonds For Sale

Notice is hereby given that the School Board of Pulaski School District (No. 4) of the County of Pulaski, Virginia, will receive bids at the office of J. F. WYBOR, Treasurer of Pulaski County, until twelve o'clock noon on Monday, August 3, 1914, for the purchase of \$58,000 of bonds of said school district; said bonds to be coupon bonds of the denomination of \$500 each, dated September 1, 1914, bearing interest at the rate of five per cent. per annum, interest payable semi-annually; \$5000 of said bonds mature in five years, \$3000 in ten years, \$10,000 in fifteen years, \$10,000 in twenty years, \$12,000 in twenty-five years, and \$13,000 in thirty years; said bonds being issued for school improvement in said district.

Certified check for \$1000 must accompany each bid as an evidence of good faith. Right reserved to reject any and all bids.

For further information apply to J. F. WYBOR, Treasurer Pulaski County, Pulaski, Virginia.

### PAVING AND GOOD ROADS

#### Road Grading

Marshall, N. C., July 7, 1914.

Sealed bids for the grading of approximately 10.2 miles of road, divided into four sections leading out from Marshall and Hot Springs, will be received by the Madison County Highway Commission at their office in Marshall, N. C., up to 12 o'clock noon July 23, 1914. Profiles and specifications may be seen in the office of the County Road Engineer, Marshall, N. C. The Highway Commission will furnish bidders with a blank form of proposal. No bid will be considered unless submitted on such form. The Highway Commission reserves the right to reject any and all bids. For further information address J. B. CLINGMAN, County Road Engineer.

### Street Improvements for the Town of Graham, N. C.

Bids are invited by the Street Commission of the Town of Graham, N. C., until July 28th, 1914, for furnishing material, labor and appliances, and grading, paving or otherwise improving the streets of said town, as far as may be done with the proceeds of the recent bond issue of \$50,000.

Specifications, forms of bonds, contract, etc., may be had on application to the Chairman of the Street Commission, enclosing a check for \$2.50, which will be returned upon the receipt of said specifications in good condition.

All bids must be accompanied by a certified check in the sum of \$250.00, which will become a forfeit to the Town of Graham if the successful bidder fails to enter upon contract and give bond within ten days of the award. As soon as the contract is closed, all checks will be returned.

WILLIAM L. VARD, Chairman of Street Commission, Graham, N. C. J. N. AMBLER, Consulting Engineer, Winston-Salem, N. C.



# PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

## Road Construction

BIDS RECEIVED UNTIL 1 O'CLOCK P. M.  
JULY 30TH, 1914.

Sealed proposals will be received at the County Clerk's Office, Princeton, W. Va., for furnishing material, grading, masonry (except substructure of steel bridges) and macadam complete on the following roads: Virginia-West Virginia State line near Pocahontas to Coopers, about 2 1/2 miles. Bramwell to Rock, about 5 miles. Bramwell to Bluefield, about 3 miles. Princeton to Athens, about 6 1/2 miles. Carr Schoolhouse to mouth of Sand Lick, about 7 miles.

Proposals will be considered separately and collectively, and each proposal must be accompanied by a certified check payable to the County Court of Mercer county for the sum of \$500.

The right is reserved to reject any or all bids. Proposals must be submitted in a sealed envelope, so marked as to indicate the nature of its contents without being opened.

If forwarded by mail, this envelope should be placed in another addressed to Clerk of Mercer County Court.

For further information apply to W. I. LEE, Chief Engineer Macadam Road Construction, Princeton, W. Va.

## Notice to Road Contractors

New Martinsville, W. Va.

Notice is hereby given that sealed bids will be received by the County Court of Wetzel County, West Virginia, at the Courthouse in the town of New Martinsville, West Virginia, up to 12 o'clock noon on the 15th day of July, 1914, for the building and improvement of approximately twenty-two miles of dirt road in Grant District in said county.

Plans and specifications for said work, form of proposal, contract and bond required are now on file in the office of F. W. Parsons, County Road Engineer, New Martinsville, W. Va., and in the office of L. E. Lantz, Chairman of the Grant District Road Committee, Jacksonburg, W. Va., as well as in the office of the Clerk of said County Court, in the town of New Martinsville.

Bidders must satisfy themselves as to the conditions and amount of road to be built, and bids must be made for each mile separately. Bids may be also made for the entire mileage.

Each bid must be accompanied by a draft or certified check on a responsible bank or trust company, payable to the order of the Sheriff of Wetzel county, for five per cent. of the amount of the bid, as guarantee that bidder will enter into contract for said work and execute bond as required if his bid is accepted.

Each bid must be made on blank form adopted by said Court, copies of which may be obtained from the County Road Engineer or from the Chairman of said Grant District Road Committee.

The County Court shall have the right to accept the bid of the proposer and award the contract for any one or more miles of road bid for, unless the bidder specifically sets forth in his bid that the same shall not be done.

Bond in a penalty equal to the amount of the bid, with surety to be approved by said Court, will be required with each contract.

The right is reserved to reject any and all bids.

S. MYERS,  
Clerk County Court,  
Wetzel County, W. Va.

## WATERWORKS AND SEWERS

### Water-Works System

New Boston, Texas.

Sealed bids will be received by the City Council of the City of New Boston, Texas, until 5 P. M. Monday, August 3, 1914, and opened and publicly read immediately thereafter, for furnishing all materials therefor and building complete a water-works system for the said city. Said system will include the drilling of a battery of shallow wells, the laying of about 3800 feet of 6-inch and 1500 feet of 4-inch C. I. water pipe. Also, 4800 feet 2-inch galvanized-iron pipe, 6 hydrants and 6 gate valves, two oil engines and triple pump and power-house, and one 100-foot 50,000-gallon-capacity water tower and tank, all completely installed ready for operation.

Plans and specifications can be had from the engineers upon payment of \$5 for same. The City Council reserves the right to reject any or all bids.

O. B. PIRKEY, Mayor.  
O. H. PROCTOR, City Clerk.  
NAGEL & PETERSEN, Engineers,  
Muskogee, Oklahoma.

## Sewers

Belzoni, Miss., July 7th, 1914.

On Tuesday, August 4th, 1914, the Mayor and Board of the Town of Belzoni, Miss., will open sealed proposals for furnishing materials and constructing approximately three miles of vitrified-pipe sewers from 8 to 12 inches in diameter, with necessary man-holes, flush tanks, etc.; also for a sewage-pumping plant, consisting of a motor-driven centrifugal pump, etc.

Complete plans and specifications and information for bidders will be on file in the office of Jeff Clark, Town Clerk, on and after July 20, 1914. The town reserves the right to reject any and all bids.

W. S. KNOTTS,  
Mayor.

## Water-Works Station, Filters, Machinery and Extension

La Grange, Georgia.

Proposals will be received by the undersigned until 2 P. M., July 21, 1914.

The work will include supplying all materials and labor necessary to construct water-works, with all appurtenances, including filters, two brick stations, reinforced concrete, coagulating and clear water basin, transmission line and electric pumping machinery.

Drawings and details may be examined and blank form of specifications and bid sheet be obtained of T. J. Harwell, City Clerk, or the Consulting Engineer, Atlanta, Georgia.

A deposit of ten (\$10) dollars will be required for each set of plans, which will be refunded on the return of the plans in good condition.

Each proposal must be accompanied by a certified check in the sum of five (\$5) per cent. of the amount bid as evidence of good faith upon the part of the bidder.

The City reserves the right to reject any and all bids, or, waiving formalities, to accept any which may seem to it to be the best for the City of La Grange.

J. D. EDMUNDSON, Mayor,

JAMES NISBET HAZLEHURST,  
Consulting Engineer,  
Atlanta, Ga.

## Notice to Sewer Contractors

Blytheville, Ark.

Sealed proposals will be received by the Board of Commissioners of Sewer District No. 1, Blytheville, Ark., until 1 P. M., July 30, 1914, and then publicly opened. For the construction of a complete sanitary sewer system, including sewage treatment works, consisting of the following quantities:

6000 feet of 15" sewer cut 8'-18".  
3500 feet of 12" sewer cut 6'-12".  
3000 feet of 10" sewer cut 4'-10".  
5200 feet of 8" sewer cut 4'-10".

70 Manholes.  
60 Flush tanks.  
Pumping pit.

Electrical driven pumping outfit (2 units.)  
Sewage treatment works consisting of contact and sand filtration beds with all necessary appurtenances.

All work to be absolutely watertight and free from all infiltration of ground water. The above quantities are approximate and are subject to change.

Plans can be seen and specifications procured after July 15, 1914, in the office of A. C. Lange, Secretary, Board of Commissioners, Blytheville, Ark., and at the office of R. C. Huston, chief engineer, Room 630-32, Exchange Building, Memphis, Tenn.

No bid will be received unless accompanied by a certified check in the sum of \$3000. The right is reserved to reject any and all bids.

The legal proceedings pertaining to the issuance of the bonds have been completed and approved, and the contract will be awarded subject to the sale of the bonds.

## BOARD OF COMMISSIONERS.

T. J. MAHON, President.  
W. N. FIELDS.  
A. C. LANGE, Secy. and Treas.  
A. G. LITTLE, Attorney.  
R. C. HUSTON, Chief Engineer.

## MISCELLANEOUS

### Dredge-Boat Work, Etc.

#### NOTICE TO CONTRACTORS.

Union City, Tenn., July 7, 1914.

Sealed bids will be received until noon of Tuesday, the 4th day of August, 1914, for approximately 446,700 cubic yards of ditch work with floating dredge and approximately 21,000 cubic yards with teams, and for clearing approximately 125 acres of right of way. Will entertain bids for all or any part of said work. Bids on work as a whole or for dredge-boat yardage must, as a guarantee of good faith in entering into contract, be accompanied by certified check for one-tenth (1-10) of amount so respectively bid; bids for team work yardage and clearing, as a whole, must likewise be accompanied by certified check for \$1000; bids on team work yardage and clearing separately must be accompanied respectively by certified check for \$500. Right to reject any and all bids reserved by Board of Directors. Specifications can be had by applying to W. C. Kelly, engineer, Union City, Tenn. Work to be completed in one year.

HARRIS FORK DRAINAGE DIST. No. 3,  
J. L. PICKLE,  
Secretary of the Board of Directors.

## Marine Railway—Bridges—Spillway

SPRING LAKE DRAINAGE AND LEVEE DISTRICT, TAZEWELL COUNTY, ILLINOIS.

Sealed bids will be received until 11 o'clock A. M. July 24, 1914, by the Commissioners of the Spring Lake Drainage and Levee District, at the office of Attorney J. M. Powers, in Pekin, Illinois, covering the following work:

First—A Marine Railway for transferring boats across the drainage district levee, including the foundations, tracks, structural steel work, and gasoline-engine-driven power plant.

Second—A Girder Draw Bridge and an I-Beam Highway Bridge.

Third—A Sheet Piling Spillway with brush and rock apron.

For further information address Harman Engineering Co., Civil, Mechanical and Electrical Engineers, Peoria, Illinois.

## Power Plant Equipment

Sealed proposals, addressed to the Mayor and Board of Town Commissioners of Scotland Neck, N. C., will be received at the Mayor's office at Scotland Neck up to 12 o'clock noon on Thursday, the 23d of July, 1914, for furnishing the following:

One 400-horse-power 200 R. P. M. Steam Engine.

One 250 K. W. Engine Type 2200-volt Alternator with Exciter and Switchboard.

One 250 H. P. Water-Tube Boiler, erected.

No other apparatus to be considered at this time, but separate tenders will be received on the several items.

Proposal forms and further information may be obtained from the Engineer at Durham, N. C.

Proposals will be opened in the presence of those interested, but the Board reserves the right to reject any and all bids.

By order of the Board.

L. R. MILLS, JR., Supt.,  
Scotland Neck, N. C.

Engineer,  
WM. M. PIATT,  
Durham, N. C.

## Steel Bridge

Sealed bids will be received up to and until 12 o'clock noon on Thursday, July 30, 1914, for a steel bridge to be built by the Joint Boards of County Commissioners of Gaston and Mecklenburg Counties, North Carolina, over Catawba River at Mt. Holly, N. C.

Bridge consists of two spans over the river 200 feet long, with steel approach at each end. A clear roadway or 16 feet. Bridge floor to be 35 feet above water. Substructure concrete and cylinder piers. Appropriation for work, \$20,000.

Plans and specifications are on file and may be seen in the office of the Board of County Commissioners in Mecklenburg County Courthouse at Charlotte, N. C., and in the office of the Board of County Commissioners of Gaston County in the Courthouse at Gastonia, N. C.

Bids will be received by the Boards of Commissioners of Gaston and Mecklenburg Counties in joint session at the site of the new bridge, and opened by them after 12 o'clock noon of the above date.

Right is reserved to reject any or all bids.

O. G. FALK,  
Chairman Gaston County Comms.  
W. M. LONG,  
Chairman Mecklenburg County Comms.

## Dredging

### NOTICE TO CONTRACTORS.

New Orleans, La.

Sealed proposals will be received by the Board of Commissioners of the Port of New Orleans, La., at their offices, Suite 200 New Orleans Court Building, until July 20, 1914, at 3 o'clock P. M., and then publicly opened, for dredging in the Mississippi River, filling and clearing site for cotton warehouses and terminal facilities between Mississippi River and Leake avenue and between Napoleon avenue and Soulard street, New Orleans, La. Estimated amount of filling, 2,000,000 cubic yards.

Estimated amount of clearing, 90 acres. Deposit: Five thousand (\$5000) dollars cash or certified check.

Payments: Monthly.

Bond: One-half estimated amount of contract.

Plans and specifications are on file at the office of Ford, Bacon & Davis, Engineers, 921 Canal street, New Orleans, by whom full sets will be furnished on deposit of ten (\$10) dollars. Said deposit will be refunded upon the return of said set in good condition. The right is reserved to reject any and all bids.

ERNEST M. LOEB,  
President.

## 100 H. P. ECONOMIC BOILER

Cheap before removal. Made by Erie City Iron Works; complete with fixtures and fittings; good for 100 lbs. pressure; low price to quick buyer to save cost of moving.

L. F. SEYFERT'S SONS, Inc.  
437 N. Third St. Philadelphia

## GAS ENGINE

### FOR SALE OR TRADE

One 75 H. P. 3-cylinder Westinghouse Producer Gas Engine; only been used three months; in good condition; too small for our load; with small expense can be changed to Natural Gas Engine.

Home Light & Ice Company Pittsburg, Texas

# What Two Town Officials Say, Who Advertised Bonds For Sale in the Manufacturers Record

Macon, N. C., Jan. 13, 1914.  
MANUFACTURERS RECORD,  
Baltimore, Md.

Dear Sirs—"We are pleased with results advertising sale \$50,000 Warrenton Township Road Bonds in MANUFACTURERS RECORD. We did not advertise in any other paper, but received fifty or sixty inquiries and a satisfactory bid. Sold at par to Messrs. Sidney Spitzer & Co., Toledo, Ohio."

Yours very truly,  
P. M. STALLINGS, Chm.

Enfield, N. C., Feb. 14, 1914.  
MANUFACTURERS RECORD,  
Baltimore, Md.

Gentlemen—"Our Board was very much pleased with sale of bonds, which brought premium of \$1803.00, and in which you aided us so much in selling. Kindly accept our thanks, and oblige."

Yours very truly,  
J. WALDO WHITAKER,  
Township Clerk.

The fact that they were pleased with the results obtained clearly demonstrates that the Manufacturers Record is closely read by active bond buyers and that its "Proposal" advertising department is the way to a quick and profitable sale.

Whenever you have any bonds to offer for sale it will pay you to advertise them in the "Proposal" columns of the Manufacturers Record, thereby reaching the leading financial institutions and investors throughout the country.

Rate 20 cents per line per insertion

## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

### Activity at Pittsburgh Plant of the Combustion Engineering Corporation.

The Pittsburgh plant of the Combustion Engineering Corporation of 11 Broadway, New York, has been operated double time to enable the company to keep up with the steadily-increasing demand for its type "E," high-duty, underfed stoker for modern power plants. This stoker may be installed in old settings without much change to the furnace. It has a special dumping arrangement that makes the work of the fireman easy. The company states that its staff of consulting men look after the interests of customers and prospective customers, and recommend the sort of equipment that is needed in a plant to give the greatest economy and satisfaction.

### Incorporation of Roofing & Pipe Covering Co.

For the purpose of conducting a jobbing and contract business in roofing and pipe covering in the States of Maryland, Virginia and the Carolinas, the Chesapeake Roofing & Pipe Covering Co., 30 Light St., Baltimore, Md., has been incorporated with F. M. Cartland as president and general manager and Frank A. Knowles as vice-president. Mr. Cartland was for several years connected with H. W. Johns-Manville Co. of New York, and Mr. Knowles has been engaged in the roofing and pipe covering business in Baltimore, Washington and vicinity for 22 years. Connections have been made by the company with the Philip Carey Mfg. Co., Lockland, O., for its line of pipe coverings; the Keasby & Mattison Co., Ambler, Pa., for asbestos roofing, and the Barber Asphalt Paving Co., Philadelphia, Pa., for "Genasco" and other

brands of prepared roofing, waterproofing, mastic and other asphalt products. The company states that prepared roofings of all kinds will be furnished, and that it carries a complete line of tile, slate and asbestos shingles.

### Craddock-Terry Company.

Craddock-Terry Co., Lynchburg, Va., has taken over the wholesale and manufacturing shoe enterprises of the Burrow, Jones & Dyer Shoe Co. and the Kaut-Reith Shoe Co. of St. Louis, recently mentioned as purchased. This St. Louis business will be conducted as the McElroy-Sloan Shoe Co. and as the Western department of the Craddock-Terry Co. The latter has increased its directors by electing W. F. McElroy, W. M. Sloan, T. L. Mauldin and J. T. Dyer, all of St. Louis. Two additional vice-presidents elected were Charles G. Craddock of Lynchburg, sales manager, and W. F. McElroy, managing director of Western department. It is expected that for the first year the company's business will be increased about \$2,500,000. About 150 salesmen are being employed, and all the factories are busily engaged on orders for next fall and samples for next spring.

### Metallic Railroad Tie With Removable Rail Connections.

A railroad tie of pressed steel, including means for removably securing the track rail in place, has been invented by L. F. Davoll of Cedar Bluff, Va. The object of the invention is to provide a metallic tie including means for securing the rail and affording a rail seat having a certain amount of resiliency and affording accommodation for the contraction and expansion of the rail due

to changes in temperature. A further object of the invention is to provide a tie simple of construction, durable, efficient in operation and inexpensive to manufacture. The tie may be made of galvanized ingot steel, is "U" shaped, and comprises a flat bottom, side walls which diverge slightly from the bottom, and are provided on their upper edges with outwardly extending horizontal flanges. The bottom of the tie is provided at spaced intervals with pairs of transversely disposed anchoring ribs, punched or stamped in the metal. The rail is secured to the tie by means of oppositely disposed retaining hooks, bolted to the tie, whose hook portion engages opposite edges of the back flange of the rail and extend through openings cut into the body portion of the tie plate, and hold the rail securely against lateral displacement.

### TRADE LITERATURE.

#### Ewart Detachable Link-Belt.

Complete information on the detachable link-belt, and illustrations made from actual photographs, are given in Section "A" of catalogue No. 110, on original Ewart link-belt and sprocket wheels, issued by the Link-Belt Co. of Chicago, Ill.

#### Thor Portable Electric Drills.

Circular "E-I" has been issued by the Independent Pneumatic Tool Co., Thor Building, Chicago, on the new Thor portable electric drill manufactured by the company. The Thor portable electric drill, which is built in four sizes, is equipped with universal motor for alternating and direct current, and is adapted for sheet metal work, drilling holes in automobile frames, fenders, etc., and wood boring.

#### Aztec Liquid Asphalt.

The demand for good roads and streets in the small cities and villages, which at one time were content with slovenly streets, and the application of asphalt to various industries, including roofing, pipe covering, waterproofing, mastic floors for railroad station platforms, sidewalks and cellars, have been an important force in the development of the asphalt business. The Inter-ocean Oil Co., 90 West St., New York City, has issued a catalogue on "Aztec Asphalt" and Aztec liquid asphalt for oil-

ing roads, showing illustrations of many streets and roads treated with Aztec asphalt and describing the properties of Aztec asphalt and its adaptability for use in the manufacture of asphaltic products.

#### Simplex Wire and Cable Manual.

The "Simplex Manual," in addition to containing information regarding Simplex products, manufactured by the Simplex Wire & Cable Co., 201 Devonshire St., Boston, Mass., gives tables and data for the ready reference of electrical engineers, contractors, wiremen, etc. The tables and information are based on the most modern electrical practice in connection with wires and cables. The manual will be sent to interested persons on request to the company.

#### Zelnicker Lumber Crayons.

Lumber crayons made in different colors, and for both dry and green lumber, for marking bundles, boxes, barrels, glass, leather, metal, etc., are illustrated and described in a folder on "The Story of Zelnicker Lumber Crayons," issued by Walter A. Zelnicker Supply Co. of St. Louis, Mo. Genuine soapstone crayons, sawed of extra strong fiber, for marking steel so that fire will not burn it off, are also manufactured by the company and described in the folder.

#### "Ironclad-Exide" Battery for Storage Battery Locomotives.

Bulletin No. 146, issued by the Electric Storage Battery Co. of Philadelphia, contains description and illustrations of apparatus manufactured by the company and valuable information to engineers who are interested in the subject of storage battery locomotives. Information on tractive effort required to overcome friction on level and on grade, and how to obtain watt hours per mile and total watt hours of battery capacity and ampere hours of battery capacity for tractive effort is given, together with tables for boosting rates, and diagrams and charts of battery sizes and capacities, and charge characteristics, and examples showing approximate size of storage battery to be used for a given track. Illustrations of "Ironclad-Exide" batteries in actual operation are also shown in the bulletin. This and other bulletins, catalogues and booklets issued by the company will be sent upon request.

# PATENT YOUR IDEAS

Book "HOW TO OBTAIN A PATENT" and "WHAT TO INVENT" sent free. Send rough sketch for free report as to patentability. We advertise your patent for sale at our expense.

## Patents for the Following Inventions are For Sale AND WE WILL FURNISH FULL DETAILS UPON REQUEST

Beef Topper.  
Collar and Shirtband Fastener.  
Silo Roof.  
Rule-holding Pocket.  
Animal Smoker.  
Spring Motor Bicycle.  
Motorcycle Clutch and Brake Control.  
Combined Screen and Fly Trap.  
Spark Plug.  
Fire Starter.  
Pencil Sharpener.  
Motor-driven Hoof Trimmer.  
Harrow.  
Door Check Hinge.  
Switch Point Thrower.  
Bale Hook and Wire Cutter.  
Cotton Picking Device.  
Railroad Gage.  
Silo Distributer.  
Odorless Garbage Can Cover.  
Tire Protector.  
Iron Singletree.  
Shade and Curtain Bracket.  
Gallery Target.  
Sanitary Milk Strainer.  
Wire Stretcher.  
Incubator.  
Chicken Roost.  
Plowshare Securing Device.  
Oven Platform.  
Nut Lock.  
Automatic Window Lifter.  
Trolley Guard.  
Fuel Mixing Device.  
Automobile Signal.  
Lantern.  
Suitcase Handle.  
Deep Well Drill.  
Self-cleaning Currycomb.  
Automatic Drill Valve Grinder (U. S. and foreign).  
Wheel Mounting.  
Resilient Vehicle Wheel.

Auto Starter.  
Milk Bottle Holder.  
BHC Brace.  
Adjustable Screw Clamp.  
Harvester.  
Brake.  
Vanity Case.  
Fruit Picker and Conveyor.  
Weather Strip.  
Seed Corn Stringer.  
Collapsible Shipping Box.  
Railroad Tie.  
Folding Umbrella.  
Motorcycle Lock.  
Electric Water Heater (U. S. and foreign).  
Motorcycle Stand.  
Crowbar.  
Hay Rack Lifter.  
Whip Lock.  
Threshing Machine.  
Harness Snap.  
Poultry Fountain.  
Hammer.  
Jar Cap Wrench.  
Railway Switch.  
Pastry Cutter.  
Land Marker.  
Rail Joint.  
Fire Alarm System.  
Railway Guard Rail.  
Golf Tee.  
Saw Set.  
Turning Lathe Attachment.  
Metal Clothespin and Clip.  
Motor Sleigh.  
Latch.  
Thill Coupling.  
Cotton Planter.  
Bed Table.  
Hoe.  
Automobile Fender.  
Street Sweeper.  
Shuttle.

Compressed Air Exhaust Muffler.  
Sled Attachment.  
Hog Catching and Holding Device.  
Screened Ventilator.  
Wood Splitter.  
Dirigible Headlight.  
Clothespin.  
Railroad Safety Signal.  
Toy.  
Staple Puller and Wire Cutter.  
Gang Plow Seeding, Drilling and Harrowing Attachment.  
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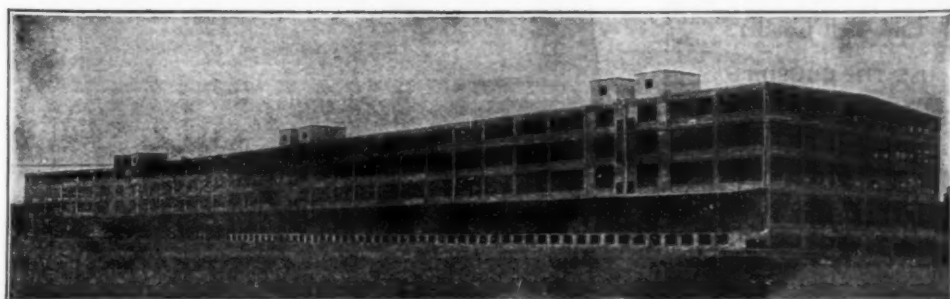
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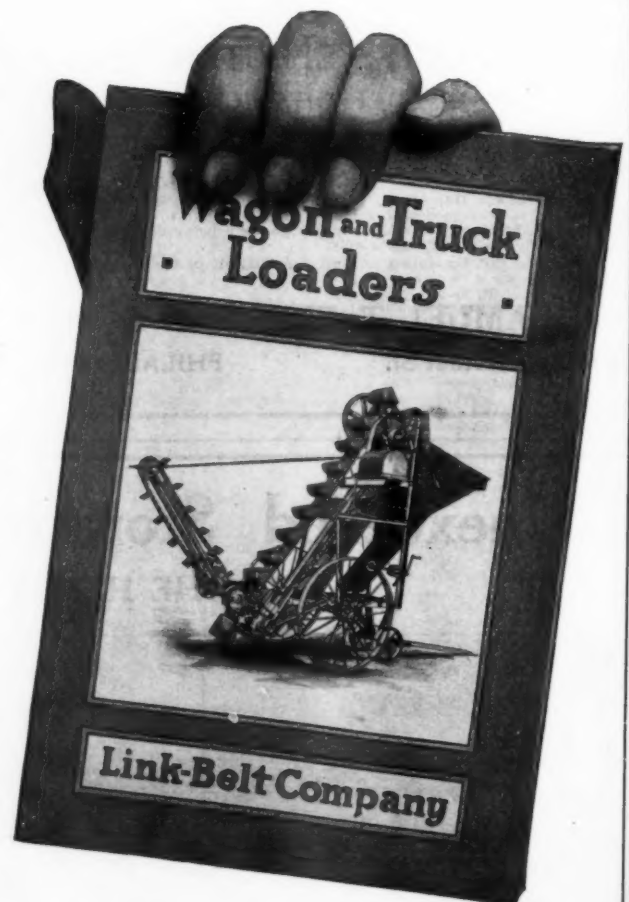
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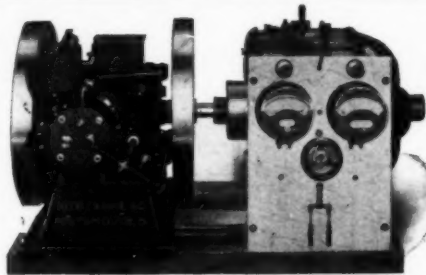


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170 H. P. direct connected to a 120 K. W. 250 volt Western Electric Generator complete; seen running

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1 80 H. P. Vertical, 100 lbs. steam.  
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28"x48" Hamilton.  
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16"x32" Rickards.  
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1 150 K. W. 250-volt D. C. Crocker-Wheeler Generator, direct connected to 14½"x24"x16" Wright Center-Crank Tandem Compound Automatic Engine, 200 H. P. M.  
1 50 K. W. 125-volt D. C. Westinghouse 6-pole Generator, direct connected to 10"x18"x10" Westinghouse Compound Engine, 315 H. P. M.  
1 105 K. W. 220-volt 3-phase 60-cycle Westinghouse Alternator, direct connected to Buckeye Engine.

BOILERS, PUMPS, HOISTING ENGINES.  
WESTINGHOUSE ENGINES, GAS AND  
GASOLINE ENGINES, HEATERS,  
STONE CRUSHERS, AND GENERAL EQUIPMENT

### FRANK TOOMEY, Inc.

127-131 North Third Street

PHILADELPHIA, PA.

#### MACHINE TOOLS

##### LATHES

36"x12" New York Safety. 36"x14" Smith.  
22"x18" Schumacher & Boye.  
30"x18" Bement-Miles.  
30"x22" Bement-Miles. 28"x18" Fifield.  
27"x21" Pratt & Whitney.  
26"x17" Johnson. 26"x12" Fifield.  
22"x9" Lodge & Davis. 24"x10" Putnam.  
19"x8" LeBlonde, turret attachment.  
18"x10" Schumacher & Boye, taper attachment.  
18"x6" Hendey Lathe, taper attachment.  
33" Extension Bed Gap Lathe.  
18"x8" Reed. 16"x7" Putnam.

##### PLANERS

11"x8" 10"x18" Betts.  
60"x60"x14" Sellers, 4 heads.  
60"x60"x14" Pond, 2 heads.  
48"x48"x16" Detrick & Harvey Open-Side Planer, cross rail lengthened to plane 60" wide, 3 heads, supplementary rolling table.  
42"x42"x15" Niles, 3 heads.  
36"x36"x12" New Haven, 1 head.  
36"x33"x12" New Haven.  
33"x33"x12" Woodward & Powell.  
28"x28"x7" New Haven, light pattern.  
28"x28"x7" Heavy pattern, has radius attachment.  
Several small planers.  
42"x42"x12" New Haven.

##### SHAPERS

24" American, back geared.  
24" Back-Geared Gould & Eberhardt.  
20" Gould & Eberhardt.  
Several small Shapers as well as traveling head, besides all sizes of new machines in stock.

##### MISCELLANEOUS

72" Bickford Vertical Boring Mill, 2 heads.  
60" Sellers Boring Mill, 2 heads.  
48" Sellers Boring Mill, 2 heads.  
36"x12" Heavy-Duty Slab Milling Machine.  
30" Throat Double-End Punch and Shear. Sellers make, capacity 1½", weight about 35,000 lbs.  
8"-Stroke Bement Slotter.  
No. 5-B Becker-Brainard Vertical Milling Machine, complete with motor.  
100-lb. Dienelt & Eisenhardt Belt Hammer.  
75-lb. Beaudry Champion Belt Hammer.  
No. 1 Catlin Pulley Keyseater.  
48" Bement Horizontal Boring Mill.  
2 No. 406-A Adriance Geared Presses.  
2 No. 22 Adriance Riveting Presses.  
No. 3 Cincinnati Universal Milling Machine.  
No. 3 Adriance Inclined Press.  
No. 3 Kemp Smith Milling Machine.  
4 No. 6 Whitney Hand Milling Machines.  
No. 2 Warner & Swasey Wire Feed Screw Machines.  
3-spindle Barr Sensitive Drill Press.  
5 No. 103 Bliss Card Cutting Presses.  
3500-lb. Bement, Miles & Co. Double Frame Steam Hammer.  
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24x48 Hamilton, \$1300. 2 50 H. P. Westge.  
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800 H. P. Tand. C. 2 125 H. P. Westge.  
Allis, \$1000. 125 H. P. St. Mary's.  
1000 H. P. Cross C. 150 H. P. Buckeye.  
Vilter, \$1000. 175 H. P. Snow.  
32 and 60x60 Allis C. C. 2 280 H. P. Westge.  
Other sizes.  
Also Boilers, D. C. and A. C. Units, etc.  
Write us for any Second-hand Machinery.  
**HAROLD R. WILSON MACHINERY CO.**  
419 Pine St. Write us for list. St. Louis, Mo.

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One 40 K. W. and one 60 K. W. 250-volt D. C. direct-connected engine generator sets, complete with all accessories and guaranteed in excellent condition at bargain prices. Large stock motors and small generators. We buy and sell only modern high-grade electrical apparatus, which we thoroughly overhaul and guarantee fully.  
**V. M. NUSSBAUM & CO.** Fort Wayne, Ind.

## FOR SALE

1 100 K. W. G. E. 250-volt D. C. Generator, D. C. to high-grade auto. engine.

100 K. W. Jeffrey 250-volt, belted to McEwen 16x16 engine.

100 K. W. Morgan-Gardner 250-volt, belted to 16x16 Skinner enclosed engine.

Both good for 125 K. W.

In stock.—Immediate shipment.—Guaranteed first-class electrically and mechanically.

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On account of change in our power supply, we are offering for sale our present equipment, consisting of one 160 K. W. G. E. direct connected unit and a number of motors. All in first-class condition. Detailed list and prices furnished on application.

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For quick removal we are offering a 150 K. W. 250 V. Western Electric Generator direct connected to a Watertown engine. Unit in excellent condition. Price \$1750.

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Some new—some used—In stock, ready for delivery.

- 1 60" "Egan" resaw.
- 2 36" "Crescent."
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- 1 36" "Atlantic Works."
- 4 36" "Crescent."
- 4 36" "Colladay."
- 1 32" "Crescent."
- 1 32" "Sidney."
- 1 27" "Sidney."
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We also have a large stock of metal-working and contractors' machinery, steam and electric power equipment.

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**A. C. UNITS 3 PHASE 60 CYCLES**  
K.W. Make. Volts. Rev. Engine.  
60 Westge. 220 300 12x12 Ideal.  
135 Westge. 440 240 Westge. Gas.  
175 We. El. 220-440 133 18x22 Fulton, 4 Va.  
240 Ge. El. 440 200 17x21 Buckeye.  
3 500 Ge. El. 2300 1800 Curtis Virt Tur.  
Also D. C. Units, Boilers, Engines, etc.  
Write us for Second-hand Machinery.  
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419 Pine St. Other Sizes St. Louis, Mo.

### Westinghouse Type "C" Motors

3-Phase, 60-Cycle, 200-400 volt, 1120 R. P. M.  
2-5 H. P.; 2-7½ H. P.; 2-10 H. P.; 1-15 H. P.;  
1-20 H. P. Condition guaranteed.

Special Prices on Direct Current Motors  
**MILLER-OWEN ELECTRIC CO., Inc.**  
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## Dynamos and Motors

Switchboards, Fans, Instruments, Etc.

Large stock new and used, both alternating and direct, ready for immediate shipment. Repairing done. Entire plants or parts wanted.

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Brand new 75 H. P. G. E. 3-phase 60-cycle 850 R. P. M. 220 volts slip ring, with base pulley and speed regulator. \$500. Motor is in original crate from G. E. Company. Never used.

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1 75 H. P. Pennsylvania Horizontal Tubular, 50 tubes.

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1 Sinker Davis Sawmill Rig.

1 Surrey Parker Log Loader.

1 Surrey Parker Log Loader Steam Plant.

1 Wheland Gang Edger.

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Saws from 12 to 55".

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1 10"x15" Haberkorn.

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2 10"x12" Class C Whelands.

2 9"x11" Class C Whelands.

1 13"x16" Twin Throttling Wheland Engine.

1 9"x9" Vertical.

1 9"x10" Shepherd.

1 12"x12" Sinker Davis.

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#### MISCELLANEOUS

1 Forbes 3" Pipe Machine.

1 Dean Steam Pump.

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Lot unused 16"x24" Crane Fittings.

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### 2000 Adams-Bagnall and Gen. Electric Arc Lamps, A. C. and D. C.

FOR SALE

A bargain to quick buyer.

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Big Bargains for Quick Action

One J. A. Fay 4-sided 9-in. molder.

One J. A. Fay mortiser and borer.

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(2) 270 H. P. Babcock & Wilcox, 200 lbs. steam.

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Large stock of Engines, Boilers, Machine Tools and General Machinery. Write for detailed catalogue.

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1 250 K. V. A. 3-phase 60-cycle 220 or 440-volt 200 R. P. M. type ATB revolving field type General Electric Alternator, direct connected to a 17½x21 heavy-duty type piston-valve Buckeye automatic steam engine, fully equipped with exciter, panel board and instruments, condition guaranteed. Bargain price for immediate order.

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In replacing our manufacturing equipment we find the following first-class

## Used Machine Tools

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16"x 6' Reed.  
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20"x 8' Lodge & Shipley, Q. C. G.  
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### SPECIAL LATHES

No. 3 Lodge & Shipley Rapid Reduction Lathe.  
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Globe Power Hack Saw, 8" capacity

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One Marion Double Grinder.  
One Marion Double Grinder on stand.  
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One "Ohio Planer," 24"x24"x12", with two heads on cross rail.  
Universal Swivel Table for Radial Drill.  
Brown & Sharp Grindstone Frame for 5"x 36" stone.  
One Mueller Grindstone Frame for 4"x27" stone.  
One 12"x40" Mumford Molding Machine.  
Write for complete description with prices of machines in which you are interested.

**The Lodge & Shipley Machine Tool Co.**  
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## ALTERNATOR

Direct Connected to

## Corliss Engine

1-400 K. W., 60-cycle, 3-phase, 440 volt Alternator, direct connected to 24x48 Heavy Duty Rolling Mill Type Frame Double Eccentric Corliss Engine.

This outfit is in excellent condition, ready for immediate delivery and service.

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An all-steel railroad swing bridge at present across River Rouge, near Delray, Mich., and may be seen in operation. Weight approximately 508,700 lbs. Approximate principal dimensions:  
Length over all.....297'  
Length center to center of end pins...294'  
Width over all.....17' 10"  
Width in clear.....14' 5"  
Height on working center at middle...38'  
Height on working center at ends....25'  
Height in clear at ends from top of rail.....18' 9"  
Full specification details furnished on application to

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The following used machinery is offered for sale, in good operating condition, located at Goldsboro, N. C.: 2 80 H. P. return tubular boilers, 1 60 H. P. return tubular boiler, 1 80 H. P. center crank engine, 1 40 H. P. center crank engine, 1 Glen Cove planer and matcher 6x14 in., 1 complete drykiln with 10 M. feet pipe. Low prices for prompt removal.

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Equipment for 100-ton Cotton Oil Mill.

Equipment for 200-barrel Cotton Oil Refinery

All machinery and equipment in excellent condition and will be sold at attractive figures as complete 100-ton Cotton Oil Mill outfit and complete equipment for Cotton Oil Refinery capable of refining 200 barrels of cotton oil per day. Inspection at mill is invited. Full information and prices will be furnished by

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Two 250 H. P. Babcock & Wilcox Water-tube Boilers, insurance certificate 150 lbs. steam pressure, each \$1000.  
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Furnished with Threads and Couplings.  
Suitable for All Practical Purposes

All Sizes In Stock Ready  
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It will interest you.

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Four new 100-horse Fire Box Return Tubular Boilers, guaranteed by Bond and Hartford Insurance Papers.

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OF EVERY CONCEIVABLE TYPE

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One 25-ton refrigerating machine, with condensers and complete equipment, in A No. 1 condition. Price \$1500 for quick sale. Reason for selling, putting in a larger machine.

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All sizes, 1" to 24"

Furnished with new threads and couplings, suitable for every practical purpose.

Also large assortment of Contractors' Equipment, Hoisting Engines, Boilers, Concrete Mixers, etc.; all thoroughly overhauled.

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8, 10 and 12-inch, also other sizes. Will pay spot cash for good usable material.

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Second-hand, all sizes, 1/2" and larger, with new threads and couplings, guaranteed for service.

1 1/2-yd. Ransome concrete mixer with gasoline motor and loader on wheels.

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2 No. 2 1/2 Smith concrete mixers with engines on wheels.

1 5-lever Stroudsburg 7x10 cableway engine.

12 Lidgerwood, Lambert and other hoisting engines.

24" and 20" industrial rail and turntables.

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**Contractors' Plant For Sale At a Bargain**  
2 10-ton Road Rollers.  
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6 Wheel Scrapers, Steam Drill Pump, etc.  
2 1/2 yard Smith Mixers with Steam Boiler and Engine mounted on same frame.  
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Ten-ton Buffalo-Pitts Roller; Water Wagon and Scarifier. Outfit as good as new. Service guaranteed. Address

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One dredge boat built of cypress (Fairbanks Machinery) with two-yard dipper. For terms and particulars, apply to

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1 American Hoist & Derrick Co. Ditcher and Steam Shovel equipped with 3-16-yd. dipper. Installed new Sept. 1, 1912. In use 10 months. Additional information upon request. Location, Jacksons Lake, Ala., L. & N. Railroad.

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Six Troy 3 1/2-yard Engine reversible dump wagons, nearly new. Bargain.

**Emerson-Brantingham Implement Co.**  
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FOR SALE

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A few selections from our big stock of snags. Write for Free Complete List No. XB 213.

1000 tons "T" Rails, 12 to 16 lbs.  
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Chicago House Wrecking Company

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### SECOND-HAND AND NEW MACHINERY

1 17x23" Locomotive; 1 14x20" Locomotive; 1 Ingersoll-Rand Compressor, Imperial type, 570 cubic ft. air; 1 Ingersoll-Rand Compressor, Imperial type, 200 cubic ft. air; 1 Rand Drill Compressor, 75 cubic ft. of air; 1 3/4 Fay & Scott Engine Lathe, as good as new;

1 Georgia Iron Works Trimmer; 1 10x12 Ajax Engine; 1 7x10 Skinner Engine; 1 8x10 Ajax Engine and Boiler on wheels; 1 100-horsepower Tubular Boiler; 1 20-horsepower Locomotive Boiler; 1 15-horsepower Tubular Boiler; 1 20x20" Slab Conveyor; 1 6" Pipe Bent for Slab Conveyor; 1 Kentucky Power Cane Mill; 1 Boiler for Turpentine Pump, new; 1 Williams Vulcanizer for Tubes and Castings; 1 Fairbanks-Morse 2-horsepower Engine and Pump, new; 1 Thompson No. 2 Log Jack, new; 1 Thompson No. 1 Log Jack, new; 1 Thompson No. 2 Slab Conveyor, new; 1 Thompson No. 1 Slab Conveyor, new; 1 Thompson Wood Splitter, new; 1 Thompson No. 1 Power Cane Mill, new; 1 Pipe Machine, second-hand; 1 9" Filer & Stowell Twin Engine; large stock of Pulleys and Hangers.

If you do not see what you want, write us, as our stock is changing daily.

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Boilers, Stationary Engines, Hoisting Engines, Pumps; new and second-hand, every size and for every duty.

**HOWARD W. READ COMPANY**

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### CONCRETE MIXERS

1 1/2-yd. Koehring Mixer, boiler and engine on trucks, side loader and water tank. Has new drum and tracter wheels.

1 No. 10 Chicago Mixer, gasoline engine on trucks, side loader and tank; 1 year old.

3 1/2-yd. Smith Mixers, boiler and engine on trucks. Two with side loader and tanks. Overhauled, ready for immediate shipment.

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### RELAYING RAILS

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**LACKAWANNA STEEL SHEET PILING. RAILS, LIGHT AND HEAVY SECTIONS. STRUCTURAL SHAPES.**

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### USED TANK CAR TANKS

for oil or water storage; 2000 to 8000 gal. capacity; practically good as new. An unusual offering for quick sale. Write or wire

**UNIVERSAL IRON & SUPPLY CO.**

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### RELAYING RAILS FOR SALE

500 Tons 80-lb. Rails.

500 Tons 90-lb. Rails.

Several Locomotives and Cars.

**CHAS. HYDE**

Commonwealth Bldg. PITTSBURGH, PA.

### For Sale

#### Relaying Steel Rails

78 tons, 48 lbs. per yard, with plates  
200 tons, 56 lbs. per yard, with plates  
800 tons, 60 lbs. per yard, with plates  
400 tons, 67 lbs. per yard, with plates

### NEW STEEL RAILS ALL WEIGHTS

**The Steel Rail Supply Company**

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### CONTRACTORS' EQUIPMENT

1 22 H. P. Buffalo Pitts Traction Engine.  
4 7-yd. Buffalo Pitts Traction Cars, 10" tread.  
2 1/2-yd. Steubener Excelsior Bottom-Dump Buckets.

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1 Lidgerwood, 750' span, 9x12 engine, complete; no towers.

1 10-ton Browning Crane, 25' boom, fine condition.

### BOILERS

2 40 H. P. on wheels, 100 lbs. steam.

3 66x16 H. T. Boilers, butt strapped, 120 lbs. steam.

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2 1900' Belt Drive Rand D 3 Type, 17x27x30.

1 845' Belt Drive Rand D 2 Type, 22x14x16.

1 Ingersoll-Rand, Class A, steam driven, 20x22x24.

Send for our complete list.

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### FOR SALE CHEAP

One Land Pile Driver, 3000-lb. hammer, 50 ways and steel rollers.

One Steel Stack, S. S., 6'x100'.

One Steel Stack, S. S., 10'x150'.

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### Wheeling Forced Feed Crushers and Tandem Road Rollers

are built to give long life and satisfactory service—Crusher jaws of manganese steel, bearings fitted with accurately machined replaceable bronze shells, adjustable by convenient hand wheel to crush any size from 1/4 inch to 3 inch—Same distinctive features in roller design—all sizes.

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LARGEST STOCK REBUILT EQUIPMENT IN U. S.

**GEORGE M. NEWHALL ENGINEERING CO.**

ROLLING MILLS: HYDE, CLEARFIELD COUNTY, PA.

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MANUFACTURERS OF RAIL CARBON; ALSO BILLET STOCK

### LIGHT STEEL RAILS

12, 16, 20, 25, 30, 35, 40 and 45 lb. SECTIONS  
SPICE BARS, TRACK BOLTS AND SPIKES, FROGS AND SWITCHES

#### RELAYING STEEL RAILS

IN ALL SECTIONS FOR IMMEDIATE SHIPMENT FROM STOCK

#### Relaying Rails

56 to 80-lb. Sections

Ready for prompt shipment. New or relaying light rails. New frogs, switches, etc. 20-ton used Climax engine in excellent condition. Specifications on request.

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### RAILS LOCOMOTIVES

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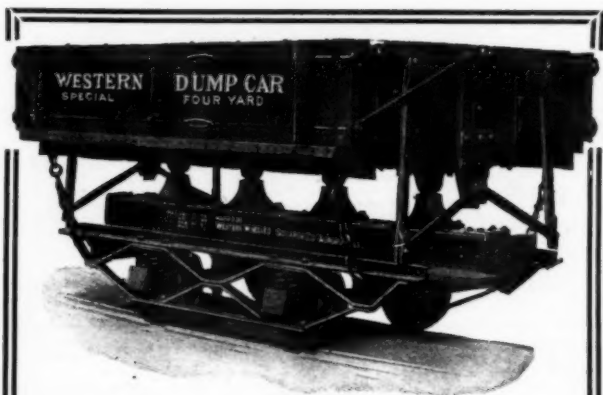
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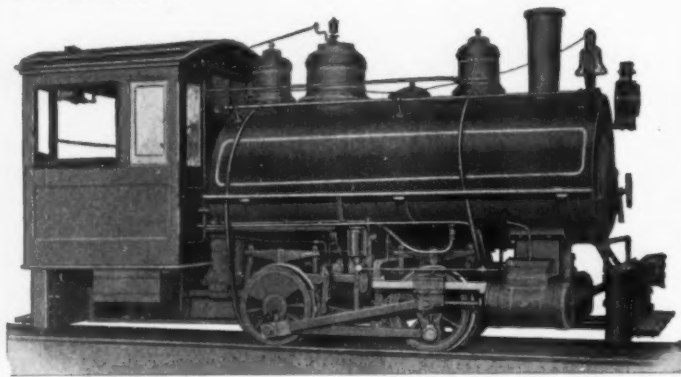
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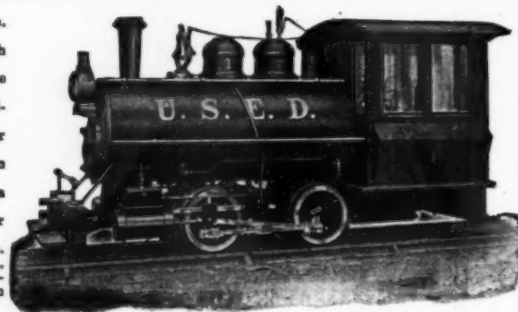
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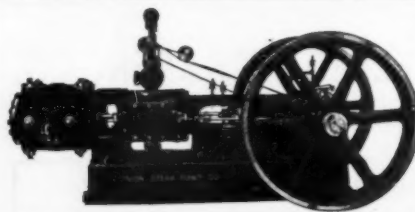


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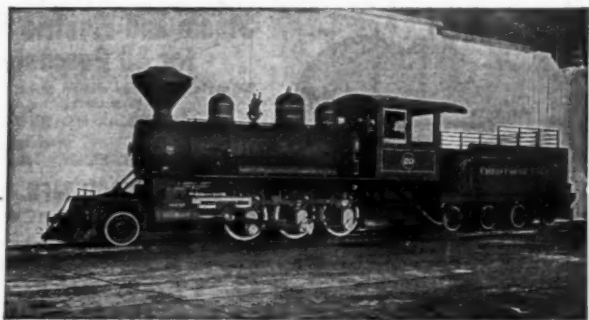
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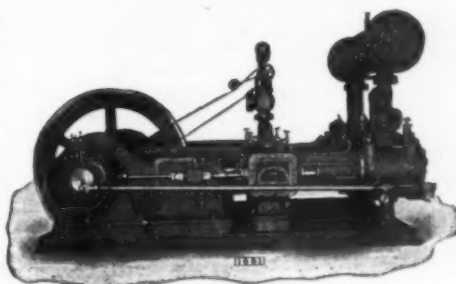
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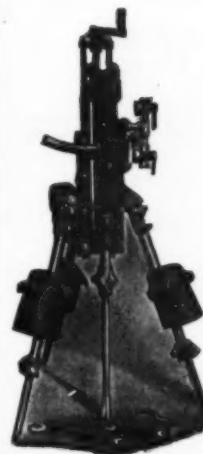
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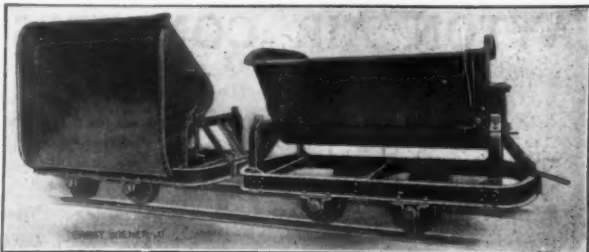
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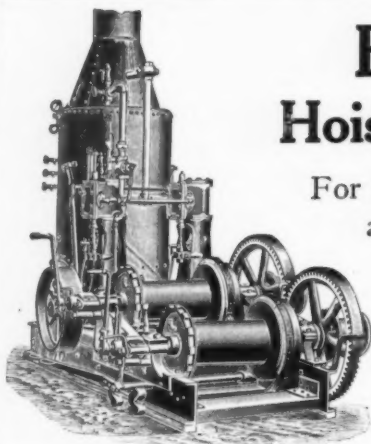
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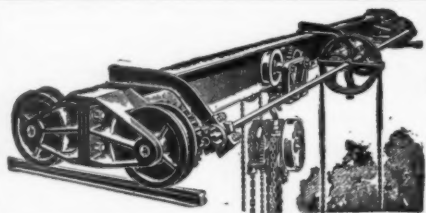
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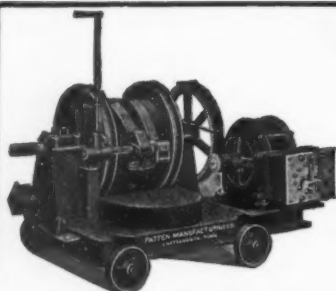


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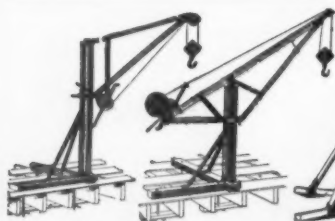
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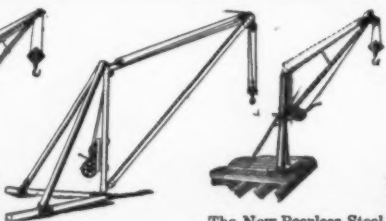
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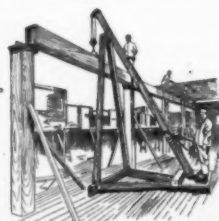
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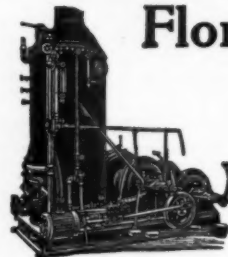
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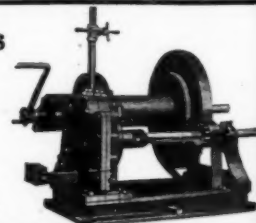
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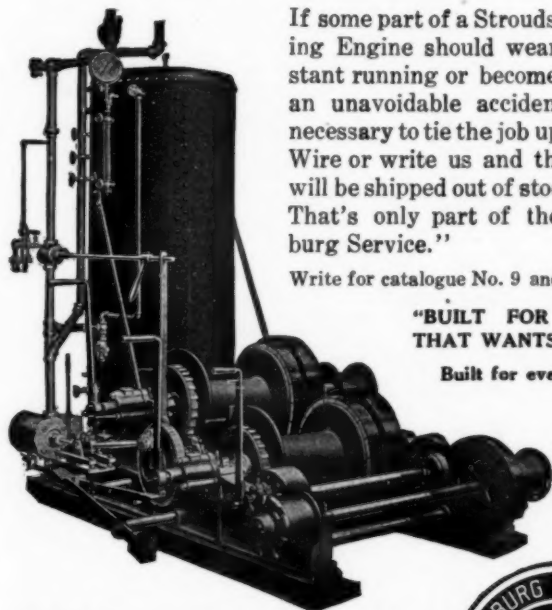




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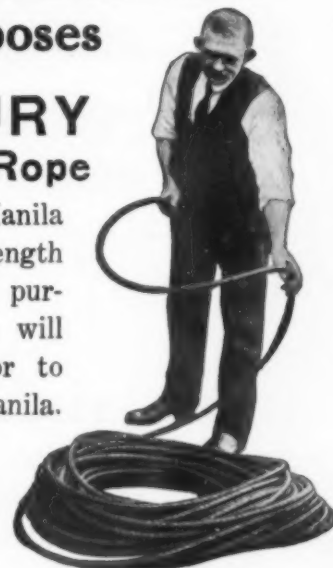
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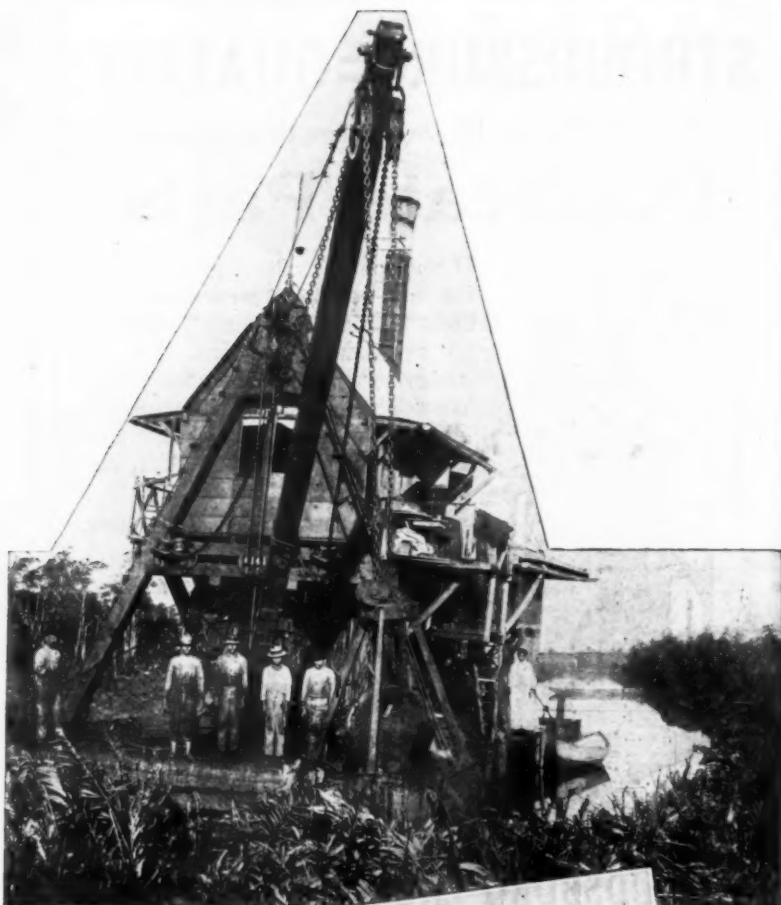


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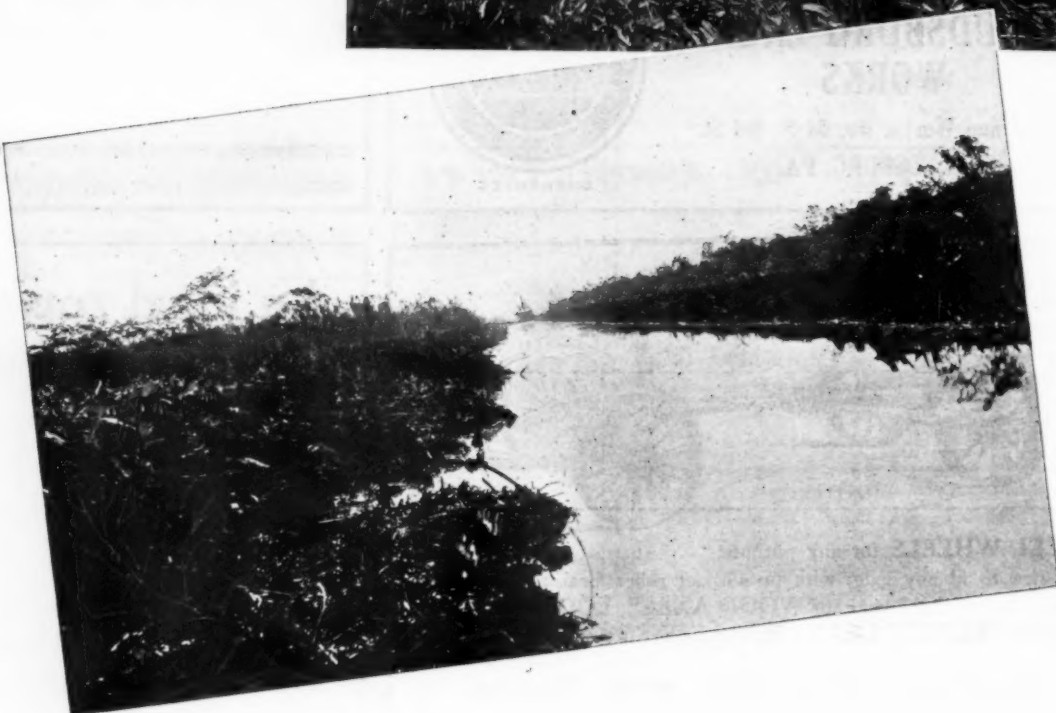
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The draining of swamp lands is turning millions of acres, formerly useless, into rich, productive land. Much money is being made by the contractors doing this work. They are men of brains—men that see ahead—men that want and insist on the best of everything. They have selected Hayward Machines for their efficiency, durability and economy. There's a Hayward Bucket for every need. Tell us your problem.

**THE HAYWARD COMPANY**

50 Church Street, New York, U. S. A.





M-O "18" 3/4-YD., SHIPPING WEIGHT 17 1/2 TONS

## MARION-OSGOOD 3-4 Yd. Revolving Shovel

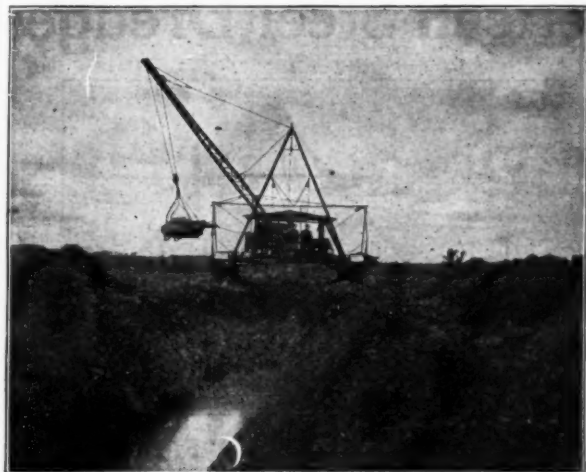
With Independent Steam-Steering Engine. Also Combination Hand-Steer Operated from Either Side of Shovel

The Marion-Osgood little revolving shovels are as complete in all details as the larger machines, because they have swinging engines; boom engines; horizontal hoisting engines with link reverse; steam hoisting friction; cut spur gears, large high pressure boiler; pump and injector boiler feeders; oil pump for engines; combination steel and oak boom and handle; steel sheaves; large water tank, etc. They can be mounted on railroad trucks or changed over to clam shell machines when desired, and are arranged to be operated by one man.

Write for descriptive circular.

**THE MARION-OSGOOD COMPANY**  
MARION, OHIO, U. S. A.

EASTERN OFFICE, 51 STATE STREET, ALBANY, N. Y.



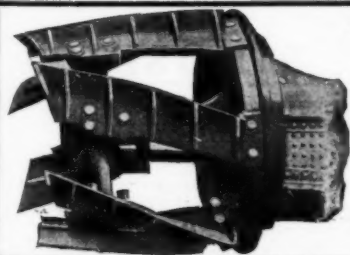
More Work at Less Cost

## The Economy Excavator

Weighs only 1/3 as much as most excavators and overcomes every objectionable feature of the heavier machine. As to economy—saves fuel, reduces labor and maintenance expense. If you want to do as good—or better—work, and at the same time increase your profits, investigate the Economy Excavator today.

You will be interested in our booklet, just off the press.

**Gade Excavating Co.,** 301-5 Peoples Bank Bldg. Iowa Falls, Iowa



Our Cutters, our Pumps, in fact all of the machinery we make for our

### Suction Dredges

are sturdy, efficient, well-proportioned pieces of machinery.

Write to us if there is anything you need.

**THE NORBOM ENGINEERING CO.**  
PHILADELPHIA, PA.



**CATERPILLAR**  
BUILT BY THE CATERPILLAR CO.

Building and cleaning ditches—  
plowing the land—  
will level it off  
ready for crops.

## Monighan Drag Line Excavators

STEAM AND GASOLINE POWER



The excavator shown in this cut can be placed on the work at less cost than any other excavating outfit. Crew for operating machine consists of only two men. The excavator is mounted on traction wheels provided with self-propelling mechanism. Boom is 40 feet long. One cubic yard bucket. We will give you, upon request, full information regarding capacity, cost of operation, etc.

We build excavators with booms from 40 to 125 ft. long and buckets from one to three cubic yard capacities.

Write for Excavator Catalog.

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Agent—P. B. ENGH { 341 Pacific Electric Bldg., Los Angeles, Cal.  
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You can make a bigger profit in reclaiming land if you have no delays digging your machinery out of the mud.

Soft, sandy land—soft, wet land—here's where the durable Caterpillar shines. *It stays on top of the ground—no miring.*

A good grip in any soil—no upsetting in digging or cleaning ditches—power to get up and down the levees—short turning—capacity for a big elevating grader—power and construction guaranteed—thousands in use—no experiment.

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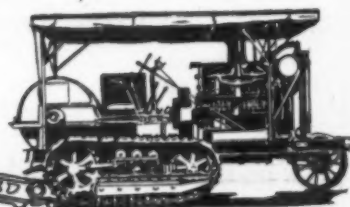
**The Holt Mfg. Co., Inc.**

Peoria, Ill.

Houston, Texas

50 Church St. New York

Send for  
Bulletin  
CG 76





## Williams 1-Yard Hercules Bucket

being used by the Great Lakes Dredge & Dock Co. for unloading crushed stone from cars for the foundation of the great high level bridge at Cleveland, Ohio.

This Hercules Bucket has also been used with wonderful success in excavating for the foundation for this bridge.

You can use Hercules Buckets to advantage.

Let us send catalog and full particulars. Write today.

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CLEVELAND, OHIO

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All Sizes. Steel or Wood Hulls. Vertical or Bank Spuds.  
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will solve your cleaning problem. Write for catalog and list of installations

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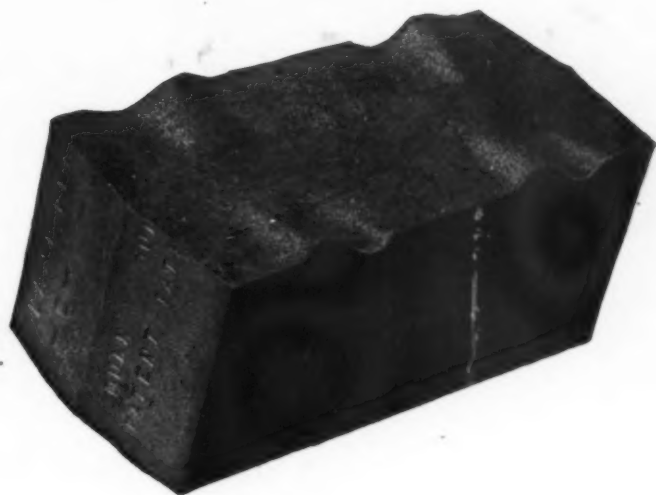


# The Triple Guarantee of Brick Pavement Satisfaction

The best brick in the world might not make a good pavement—if the pavement were improperly laid.

Proper brick, proper design and proper construction are insured when you pave with

**DUNN Wire-Cut-Lug BRICK**



**Brick Quality Is Insured** because this brick can be gotten only of licensed brick makers (combined capacity over 300,000,000) who have proven that they can make good brick. This is a fixed condition.

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up its interior structure—and it usually produces lugs that are badly formed or part of which remains in the mold. Wire-Cutting invariably produces uniform lugs and preserves all the density, all the homogeneity of the brick exactly as it comes from the auger machine.

Furthermore, the wire-cut surfaces are rougher, hence bond better—and the wire-cut edges are sharp and square so the filler can be poured flush, and the edges do not break away under traffic.

**Proper Design and Construction Are Insured** because when you use Wire-Cut-Brick you get the full advantage of Dunn Engineering Service, which is gratis and thorough. We "go the limit" in our Engineering Service, and this expert supervision of laying, rolling, filling and flushing costs you—the contractor—not a penny.

Brick makes the best Pavement and Dunn Wire-Cut-Lug Brick is the best Paving Brick. Send for Service Records and Full data. Yours for a Word.



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## Dunn Wire-Cut-Lug Brick Company Conneaut, Ohio

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One plant at Conneaut, Ohio.  
Sterling Brick Company, Olean, N. Y.  
One plant at Olean, N. Y.  
Reynoldsville Brick & Tile Co., Reynoldsville, Pa.  
One plant at Reynoldsville, Pa.  
Danville Brick Company, Danville, Ill.  
One plant at Danville, Ill.  
Wabash Clay Company, Veedersburg, Ind.  
One plant at Veedersburg, Ind.  
Clinton Paving Brick Co., Clinton, Ind.  
One plant at Clinton, Ind.

Alton Brick Company, Alton, Ill.  
One plant at Alton, Ill.  
Deckman-Duty Brick Company, Cleveland, Ohio.  
One plant at Cleveland, Ohio.  
One plant at Carrollton, Ohio.  
One plant at Malvern, Ohio.  
Tuna Valley Pressed Brick Company, Bradford, Pa.  
One plant at Bradford, Pa.  
Foster Paving Brick Company, Bradford, Pa.  
One plant at Bradford, Pa.  
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One plant at Binghamton, N. Y.  
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Bessemer Limestone Company, Youngstown, Ohio.  
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Peebles Paving Brick Co., Portsmouth, Ohio.  
Two plants at Portsmouth, Ohio.  
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Southern Clay Mfg. Co., Chattanooga, Tenn.  
One plant at Robbins, Tenn.  
One plant at Coaldale, Ala.  
McAvoy Vitriified Brick Co., Philadelphia, Pa.  
One plant at Perkiomen Junction, Pa.  
Windsor Brick Company, Akron, Ohio.  
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Train of Troy Reversibles at work in Snohomish County, Washington

“I fully agree with you  
in all the good things you say about  
**Troy Reversibles**

and I speak from experience, having bought ten from you last May, and from the second of July until November 15th built some five miles of fourteen-foot gravel roads, and resurfaced one mile. This very week I expect to put them in use again on a mile contract at this place; and as soon as that is finished they will be moved to a five-mile job which I have for this Summer.

Very truly yours,

H. S. SWANN,  
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Part of the “good things” which we say about Troy Reversibles, and with which this contractor (and hundreds like him) agrees, is the fact that with Troy Reversibles you can do big hauling at  $1/6$  to  $1/2$  your present costs.

Yes— you can get Troy Reversibles in dumpers, spreaders and platform trucks—handle almost anything. Hauling Book M. R. is ready.

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of Venezuela

to the  
"Good Roads"  
of the  
United States

Down in Venezuela is a lake of asphalt 900 acres in extent. For many years it has been "overflowing" into the United States, making roads once rough and soft, smooth and hard; making possible good roads, roads that *stay* good.

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"IT STAYS PUT"

Just as coal is **naturally** the ideal fuel, so this **lake asphalt** is **naturally** an ideal binding material for roads.

Just as it has taken nature ages to make coal, so it has taken ages to make this natural paving material. There is no artificial, manufactured substitute.

There are hundreds of miles of roads everywhere ready to prove to you the remarkable qualities of Bermudez Road Asphalt.

Shall We send you the New Bermudez Road Book illustrated with many photographs?

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**GENASCO ASPHALT EXPANSION JOINTS** have all the advantages of other prepared joints for concrete and block pavements, and in addition to this are **all asphalt**. Joints that are mostly felt cannot have the efficiency of the Genasco joint and do not adhere to the brick or concrete. The Genasco joint is made in strips 5 feet long; any width and depth desired. Send for sample.

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## Asphalt Road Oils

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STANDARD ASPHALT ROAD OIL, 40%, 50% and 60% grades, for all conditions of road service where freedom from dust is demanded.

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All of the above products carefully refined from MEXICAN ASPHALT BASE OIL and absolutely uniform in consistency.

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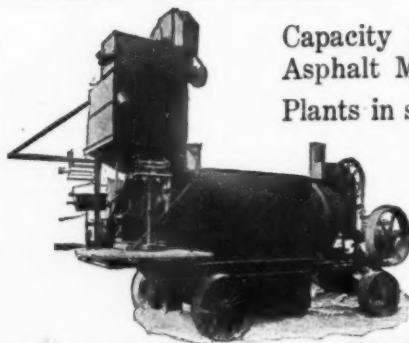
(New Jersey)

Road Oil Department

BALTIMORE, MD.

NEWARK, N. J.

## Cummer Road Asphalt Plant



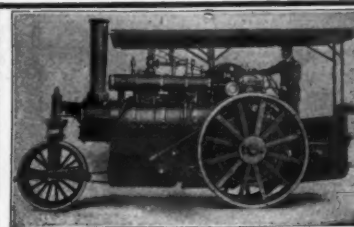
Capacity 1000 yds. 2" top or Asphalt Macadam per day.

Plants in stock.

Make test before buying.

Cummer one-car 2000-yard capacity plants in stock.

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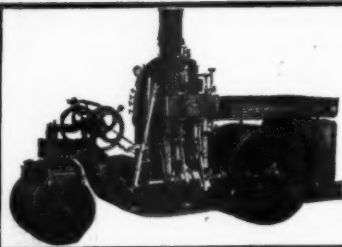
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Steam and Gasoline

The Kelly-Springfield Road Roller Co.

SPRINGFIELD OHIO

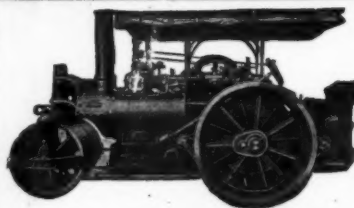
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ERIE MACHINE SHOPS  
ERIE, PENNA.



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Made in all types and sizes for all purposes, 2 1/4 to 20 tons.

BUFFALO STEAM ROLLER CO.  
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ROAD PRESERVATION

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Are fully described in our new CATALOG, which we send

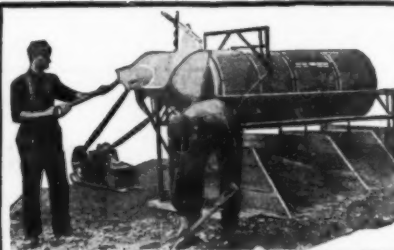
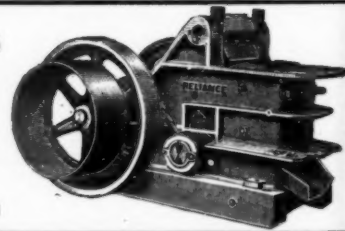
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Universal Road Machinery Co.

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For Sand, Gravel, Crushed Stone, Etc.

In one operation separates any granular mixture into various sizes. A big saving for contractors. Operated by one or two men. May be drawn along ordinary country roads. Stands hard continuous usage.

Full particulars upon request.

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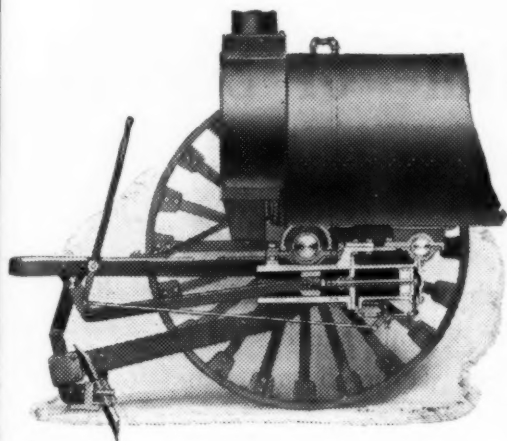
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It first saves on the original purchase price. When you are buying a roller, for a small additional sum you can have this Scarifier attached, provided you buy the Huber Roller. Thus you have a Roller and a Scarifier, and have paid for but one outfit.

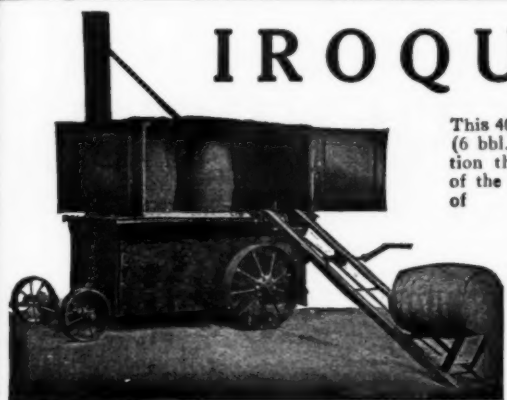
While the roller has traction power to pull this Scarifier easily, when the attachment is not used that same power can be used for other hauling, such as wagons loaded with stone, grading outfits, etc.

Scarifying bar carries nine of these heavy spikes, which are adjustable and reversible. Tears up road or street full width of roller at rear. Spikes are held in ground by cushion steam compression. They are raised clear of ground by steam power. All operator needs to do is to move a straight lever forward or back. As an economy proposition on road work you cannot beat the Huber Roller and Scarifier.

### The Huber Manufacturing Co.

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MARION, OHIO



## IROQUOIS

This 400 gal. Asphalt Heater (6 bbl. rack), steel construction throughout, is only one of the complete Iroquois line of

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Tandem and  
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### ECONOMICAL ROAD CONSTRUCTION

Look at the steady string of wagons in the illustration above.

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The Marion Steam Shovel Co. (Established 1884)

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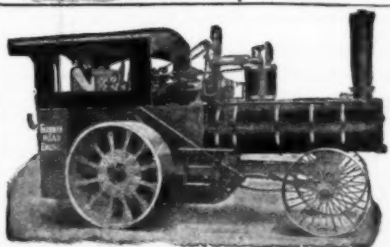
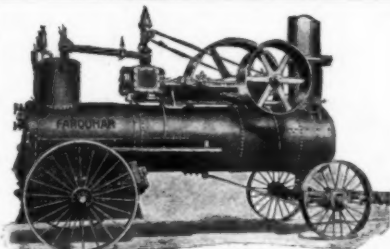
Seattle

### Economical Power

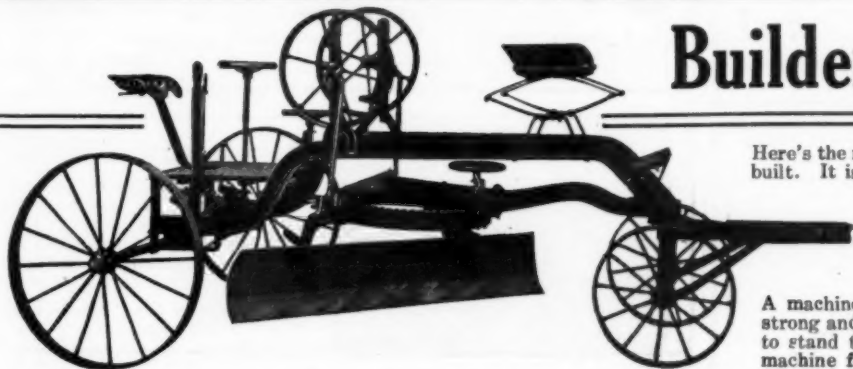
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A machine that is endorsed by highway officials everywhere. Built strong and durable, it is light enough for two horses, yet guaranteed to stand the continuous pull of four good horses. Investigate this machine for efficiency. CATALOG AND DETAILS ON REQUEST

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And the ordinary substitute materials.

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BEST TESTERS AND MOST DURABLE

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Our "Friction Joint" Gives Maximum Strength

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are in use handling Coal, Ores, Sand and Earth in every Port of the United States.



Stuebner's Patent Drop  
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## A Quick Loader

The American Steam Shovel is a quick loader. A new catalogue just out. No complications in buying or operating. A simple, substantial Contractor's shovel.

The American Clay Machinery Co  
BUCYRUS, O.



Special Shovels. Figure it out —can you afford to buy other shovels, if our Special shovels will handle enough more material per man to pay for themselves over the other shovels? We will guarantee above results.

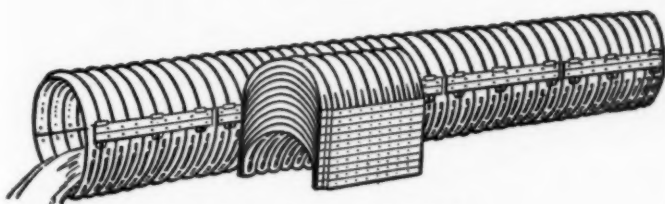
THE CONNEAUT SHOVEL COMPANY

CONNEAUT, OHIO



**BUTT-JOINT NESTABLE METAL CULVERT**

(Patented)



Ten feet constructed and ten feet nested.  
Every half section exactly alike.  
No holes cut in metal to catch water or oxygen.  
No steel bolts or rivets to start electrolysis.  
Any child can construct it.

These culverts have been used for every conceivable purpose and in all parts of the country. They have proven so satisfactory that our *repeat* orders have kept our factories busy. We could furnish hundreds of references, but after all your own experience is the best evidence. A trial order will determine the matter for you. We guarantee satisfaction.

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**Culverts**

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Near Wilmerding, Pa.

It is essential that the right of way of every railroad be properly drained. Culverts specified for this purpose must be strong and enduring—good for many years of service. "ACME" Culverts—of bolted construction—made of anti-corrosive metal—are largely preferred for this service, especially in heavier gauges.

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**THE CANTON CULVERT CO.**  
MANUFACTURERS  
CANTON, OHIO, U.S.A.

7:08

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RED "H" BRAND  
Corrugated Metal Culverts**

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For Irrigation.

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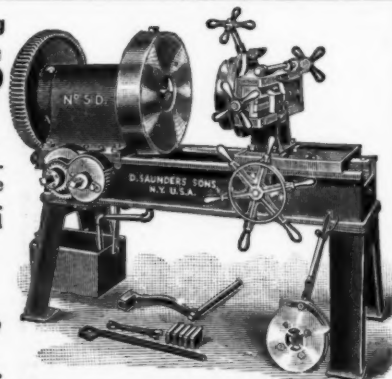
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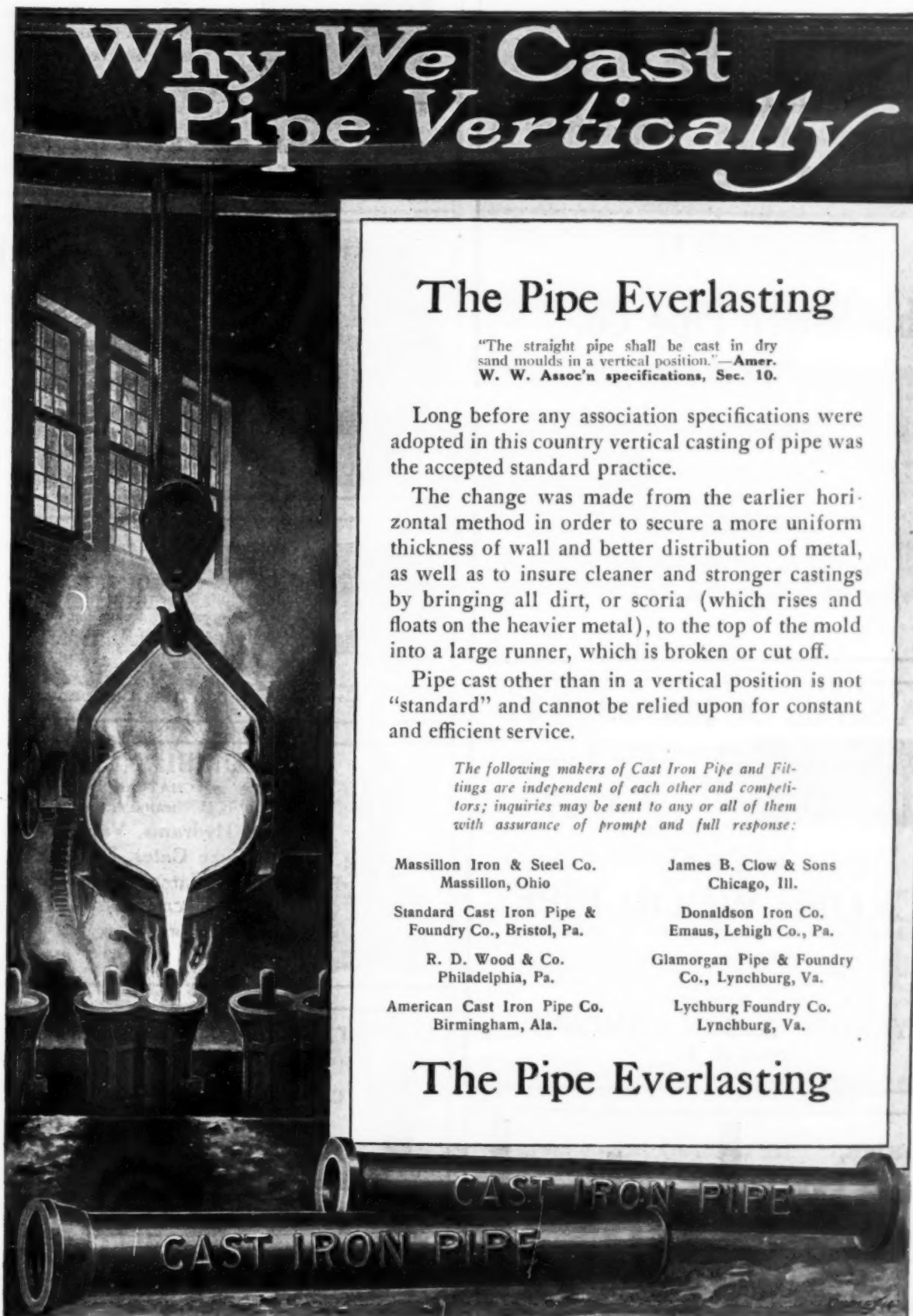
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**Salt Glazed  
Vitrified Sewer Pipe  
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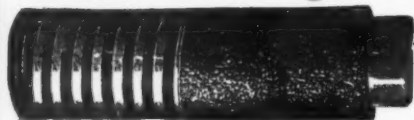
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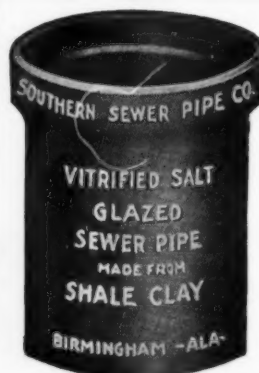
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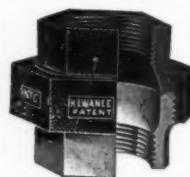
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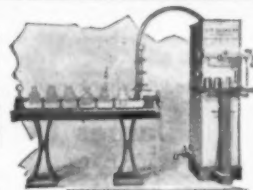
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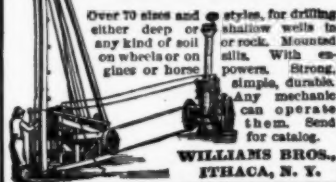
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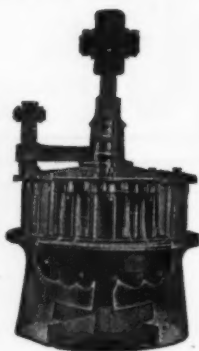
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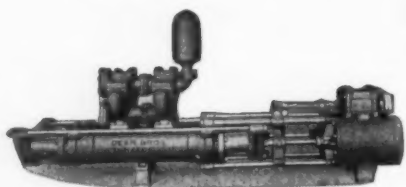
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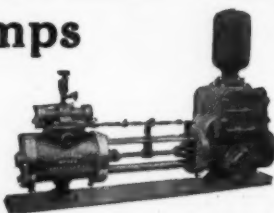
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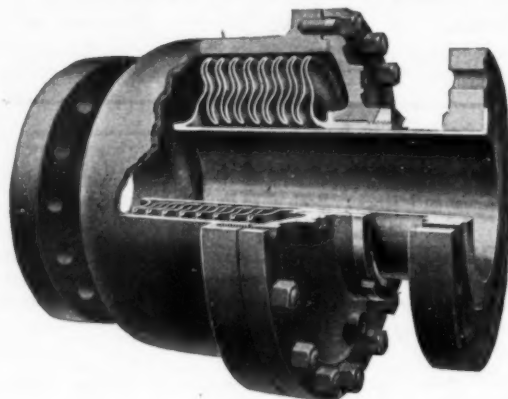
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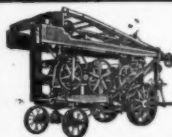
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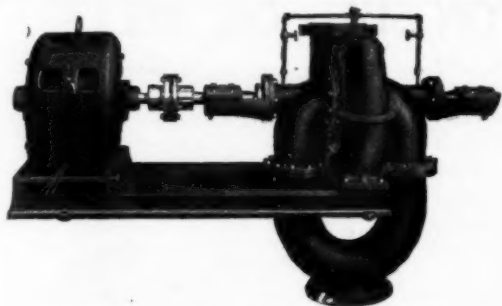
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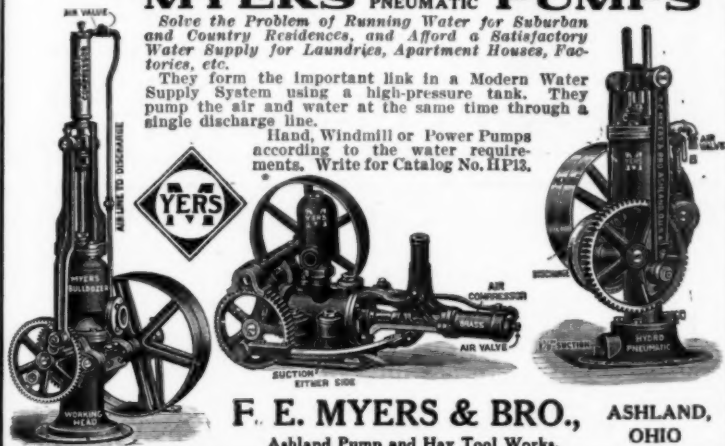
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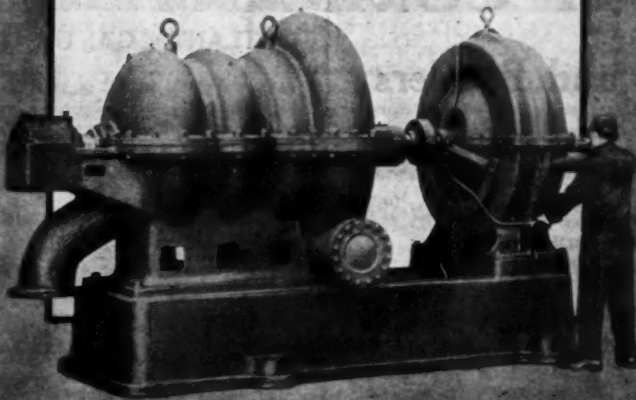


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# Pumps

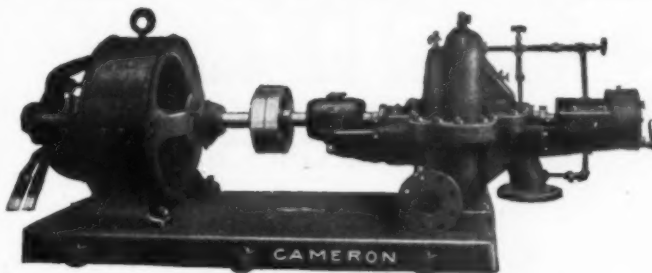
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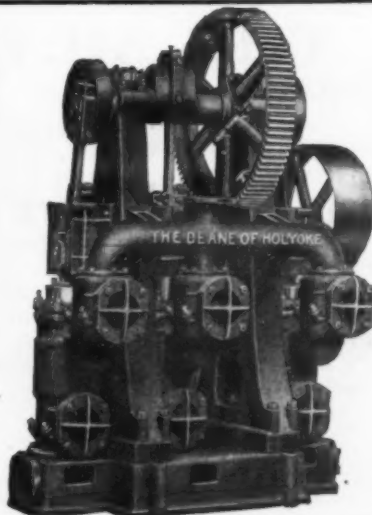
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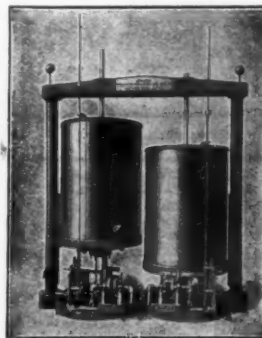
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DAYTON, OHIO, U. S. A.



## THE CARDWELL MACHINE CO.

RICHMOND, VA., U. S. A.

WE MANUFACTURE A FULL LINE OF

## OIL MILL MACHINERY

Cotton Seed, Linseed, Rape-seed, Olive, Peanut, Castor, Fish and Lard Oil

HYDRAULIC BALING PRESSES

TOBACCO MACHINERY



## The American Cotton Oil Co.

27 BEAVER STREET - NEW YORK CITY

CABLE ADDRESS: "AMCOTOIL," NEW YORK

## COTTONSEED { OIL SOAP STEARINE

GOLD MEDALS:

CHICAGO, 1893

SAN FRANCISCO, 1894

ATLANTA, 1895

PARIS, 1900

BUFFALO, 1901

CHARLESTON, S. C., 1902

ST. LOUIS, 1904

**I.X.L. COOKING OIL**

The BEST OIL

The most WIDELY KNOWN

Made at Refineries in

NEW YORK, CINCINNATI, ST. LOUIS, MEMPHIS, NEW ORLEANS, PROVIDENCE

## THE MURRAY COMPANY

DALLAS, TEXAS

ATLANTA, GA., U. S. A.

Engineers and Builders

## Complete and Modern Cotton Seed Oil Mill Equipment

AUTOMATIC SEED CLEANERS  
AUTOMATIC LINTERS  
AUTOMATIC BALL BEARING HULLERS  
STEEL FRAME DOUBLE SHAKERS  
STEEL FRAME HULL BEATERS

CRUSHING ROLLS  
MECHANICAL COOKERS  
AUTOMATIC CAKE FORMERS  
HYDRAULIC PRESSES  
POWER HYDRAULIC PUMPS

MEAL GRINDING AND BOLTING  
STEEL PRESS CYLINDERS AND HEAD TREES  
STAMPED STEEL PRESS BOXES

EVERYTHING THAT GOES INTO AN OIL MILL

Write us for Estimates and Descriptive Matter



Hydraulic Press



Stamped Steel End Drain Press Boxes

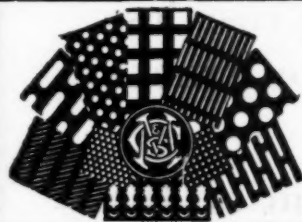
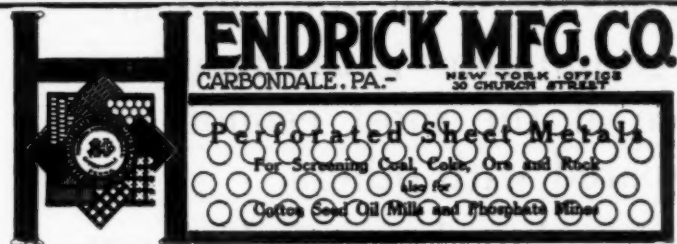


## DOES YOUR CRAYON LEAVE STAINS?

If so, you are not using the

**LOWELL CRAYON**

All the first-class textile mills prize it for its stainlessness. Let us send you a sample.

**LOWELL CRAYON CO., . . . LOWELL, MASS.**  
Original Makers Trade Mark on Every Box.**SACO-LOWELL SHOPS  
TEXTILE MACHINERY**Executive Office: 77 Franklin Street, Boston, Mass.  
Southern Office: Rogers W. Davis, Southern Agent, Charlotte, N. C.  
Shops: Biddeford, Maine; Lowell, Mass.; Newton Upper Falls, Mass.**PERFORATED METALS**

All kinds. For any purpose. Screens for every purpose where screens are used. We have devoted 43 years exclusively to the manufacture of perforated metals.

WRITE FOR NEW ILLUSTRATED SHEET

**CHAS. MUNDT & SONS**

53-57 Fairmount Ave. Jersey City, N. J.

**PERFORATED METALS HEADQUARTERS**  
Cotton Seed Oil Work A Specialty  
Send for Samples  
**ERDLE PERFORATING CO.** Rochester, N. Y.**LUFKIN** Measuring Tapes and RulesHAVE BEEN ON THE MARKET FOR 25 YEARS.  
MORE OF THEM ARE IN USE THAN ALL OTHER MAKES.  
MORE OF THEM ARE USED EACH YEAR.  
When YOU buy FOLLOW THE SOUND JUDGMENT OF EXPERIENCE.

CATALOG ON REQUEST

Saginaw, Mich. **THE LUFKIN RULE CO.** New York**COTTON MILL  
EQUIPMENT  
COTTON MILL****Loom Harness and Reeds**

Rawhide and Leather Pickers of all kinds.

Wire Heddles, Heddle Frames and Wire Goods.

Roll Covering Machinery and Supplies.

Belting, Strapping and Pickers.

Lace Leather and Belt Hooks.

Fire Hose and Supplies.

Shuttles, Spools and Bobbins.

Textile Mill Supplies.

**AMERICAN SUPPLY CO.  
PROVIDENCE, R. I.****Complete Line of Improved  
Cotton Seed Oil Mill Machinery**

Everything Necessary for the Press Room. Write us for Prices and Descriptive Circulars.

**THE FRENCH OIL MILL MACHINERY CO., PIQUA, OHIO**REPRESENTATIVES { Mr. PAUL WATSON, Galveston, Texas.  
Mr. W. P. FERGUSON, Charlotte, N. C.  
Mr. M. W. FAHERTY, Goodwyn Institute, Memphis, Tenn.  
Mr. FRANK WOLFENDEN, Candler Bldg., Atlanta, Ga.**Continental Linters**

Are more generally used in Cotton Oil Mills than any other, because of their demonstrated greater delinting capacity. Write to nearest Continental Sales Office for Catalogue L-4.

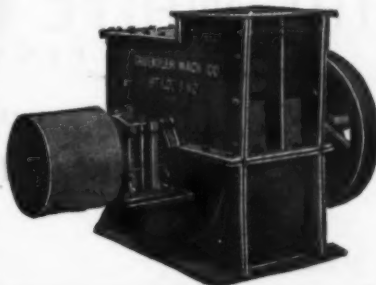
**Continental Gin Co.**Atlanta, Ga., Birmingham, Ala., Dallas, Tex.,  
Memphis, Tenn., Charlotte, N. C.**More Evidence  
of the value of Gruendler Pulverizers  
to Cotton Oil Mills.**

Following is an extract from an oil mill manager, written in the fall of 1913:

"We have only been running your cake breaker and grinder two weeks; but are so well pleased with the results we hasten to advise you. It is a pleasure to see the machine take the cake, even though green, and pulverize it with the greatest ease, and with little power. We have been unable to feed it as fast as it will take it."

That's the story—speed, certainty and little power.

Get a circular for details.

**GRUENDLER  
PATENT CRUSHER & PULVERIZER CO.**  
924-928 North First St.  
**SAINT LOUIS, MO.**



## Standard Oil Companies Own 152 White Trucks

**T**HE Standard Oil Companies have purchased a total of 152 White Trucks. Beginning with a few White Trucks these companies placed one repeat order after another because they found White Trucks essential to the efficient operation of their business.

That the greatest business organizations in the land are using White Trucks in such large numbers is the result of getting the most efficient service at the most economical cost from White Trucks as compared with others.

White Trucks cost a little more to buy because they are built a little better, last longer, run farther, and cost less to operate and maintain. In the long run White Trucks are the cheapest trucks to own.

White Trucks will put your delivery department on the most efficient basis possible—let us show you.

*Send for our Catalog*

THE WHITE  COMPANY  
CLEVELAND

*Both in Quantity and Value of Production the Largest Manufacturers  
of Commercial Motor Vehicles in America*



# OPPORTUNITIES IN THE SOUTH

—FOR—

## Manufacturers, Investors, Merchants, Farmers and Homeseekers

In the following pages leading railroads and a number of towns and cities invite your attention to the opportunities possessed by the rapidly developing South for every line of industry, for investments, and as a place for home-making in the city and on the farm.

The marvel of the day, commanding the world's attention to a greater extent probably than the development of any other section has ever received, is the amazing material upbuilding of the South. Everywhere men in every walk of life are beginning to study the South. They are coming to realize something of its matchless resources, to know something of the opportunities which it presents for manufacturing and for mining operations, for city building activities, for the utilization on a large scale of the cut-over timber lands and the reclaimable wet lands of the South.

With a view to presenting to the world from week to week the resources and the growth and the opportunities which are offered for all of these things, some of the leading railroads of the South and Southwest, some of the great public service corporations intimately identified with the upbuilding of this section and some of its progressive towns and cities from week to week tell the story of what they have to offer to the manufacturer, to the investor, to the merchant, to the pleasure-seeker, to the health-seeker. Study the pages that follow, and if you are at all interested in knowing about the South and its opportunities, its resources and its progress, if you want to keep in touch with that section which is attracting greater attention than any other part of America, get in communication with the organizations whose advertisements are to be found in the following pages.



**Splendid Factory Sites**  
in  
**Atlanta, Ga., Birmingham, Ala.**

**On A. B. & A. Right of Way**  
Rare opportunities for manufacturing in the heart of the South's most progressive section.  
A. B. & A. is liberal in its policy and offers every inducement to industrial enterprises.  
Address Atlanta, Birmingham & Atlantic R. R.  
**ATLANTA, GA.**

**THE WEST POINT ROUTE**

**Atlanta & West Point Railroad**  
THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for  
**Truck, Fruit, Stock and General Farming**

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities  
Write for information.

**E. S. CENTER, General Agent, ATLANTA, GA.**

To the

## MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama which are traversed by the

## Central of Georgia Railway

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

**J. M. MALLORY, Industrial Agent**  
SAVANNAH, GEORGIA

## Attractive Factory Sites ON THE Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the  
Illinois Central Railroad

## ABOUT THE SOUTH

MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA  
IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI  
FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

**J. C. CLAIR**

Industrial and Immigration Commissioner

**ILLINOIS CENTRAL RAILROAD COMPANY**

135 East 11th Place, CHICAGO, ILL.

# Petersburg, Virginia

## Ideally Located for Diversified Manufacture

Petersburg, Virginia, at the head of navigation on the Appomattox River, presents many points of attraction as a location for manufacturing plants of various kinds.

The Norfolk & Western, the Atlantic Coast Line and the Seaboard Air Line Railways furnish it unexcelled inlets for raw materials and unsurpassed outlets for manufactured products.

The Appomattox River, with a line of boats to Norfolk and another to Richmond, supplements and rounds out its transportation facilities in a manner that insures cheap rates.

A rapid transit interurban line between the city and Richmond (21 miles) adds greatly to the convenience of doing business.

Manufacturing is no untried experiment in Petersburg. The city already does a large and successful manufacturing business—in tobacco, in lumber, in trunks, bags and suit cases, in boxes, crates and baskets, in cotton goods and silk, in leather, hats, granite, in fireworks and fertilizer—and therefore has a population of factory workers that is a valuable asset to a manufacturing city. This is high-class, native-born labor, free from strikes, amenable to argument, easy to deal with.

Petersburg also has that other extremely necessary adjunct to profitable manufacturing business—cheap power.

The Virginia Railway and Power Company has a hydro-electric development of 6000 horse-power on the Appomattox River, from which it delivers power to manufacturing plants in the city at attractive rates and furnishes a service that is constant and complete in every way.

When the power now developed proves inadequate to the demand the company can, and will, develop 9000 horse-power more.

All the conditions for successful manufacturing meet here. Cheap raw materials, dependable labor, markets easily reached, freight rates subject to water competition, cheap power, and plenty of it.

*There are a number of eligible sites in and around Petersburg, any of which can be secured for manufacturing enterprises at low prices and upon reasonable terms.*

*Any information desired concerning openings for industries in Petersburg will be fully supplied by this Company.*

# Virginia Railway and Power Company

RICHMOND

PETERSBURG

NORFOLK

PORTSMOUTH

SUFFOLK

## VIRGINIA





Residual Kaolin Mine, Dillsboro, N. C.

Cement Plant, Leeds, Ala.

**Factory**  
**Sites**

**Business**  
**Locations**

**Southern**  
**Farms**

**and Investments**

along the

# Southern Railway System

Choice Locations in Eleven States

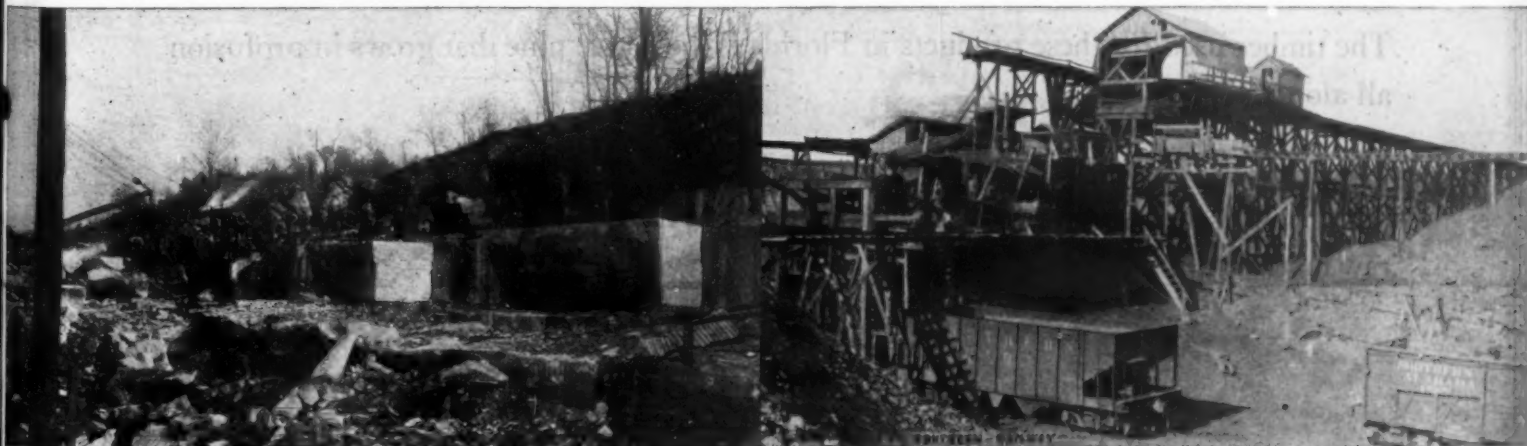
Information Free

CHAS. S. CHASE  
Western Agent  
919 Chemical Bldg.  
St. Louis, Mo.

M. V. RICHARDS  
Land and Industrial Agent  
Room 52-A  
Washington, D. C.

F. T. CHARLES  
European Agent  
Whitehall House  
London, S. W. England

Southern Ry. — Mobile & Ohio R. R. — Southern Ry. in Mississippi — Georgia Southern & Florida Ry.



Tennessee Producers Marble Quarry near Knoxville.

Brown Iron Ore Washing Plant, Russellville, Ala.

## Excellent Reasons for the Success of Crate, Box and Barrel Plants in Florida

In a recent advertisement on this page it was suggested that veneer package and barrel plants could be located in Florida with every assurance of certain success.

Facts were given that bear out the assertion that among the opportunities for profitable manufacture that are offered by the East Coast of this State, those for turning out boxes, barrels, crates and other veneer packages for the shipment of various products are especially inviting because of the immediate return at good profit which they promise.

There were shipped during the past year from points on this railroad a vast number of crates and boxes of fruits and vegetables, and many tons of fish in barrels.

This indicates the vast amount of veneer packing crates, boxes and barrels that must be required to handle the products raised in Florida.

This State offers, therefore, unusual opportunities for the establishment of plants to make these products.

Considering the present demand, coupled with the fact that truck raising and fruit growing are continually increasing, not only is there an already established market for packages and barrels, but also one that is getting larger and larger every year.

There are some box, crate and barrel factories at several points along this railroad, but they are not able to supply the present and steadily growing demand, and their output must be supplemented by that of plants outside of the State until such time as local opportunities are utilized to meet local demands.

The timber used for these products in Florida is the native pine that grows in profusion all along the East Coast.

Much of this can be secured at a very low figure from those who are clearing their lands for farming, thus this territory is furnishing both the demand for the product and the raw material for supplying it.

**Florida East Coast Railway**

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.



# Clinchfield's Strategic Location

## Look at the Map

The Clinchfield provides the most important connecting link by the shortest possible route between the Central West and the Piedmont section of the South.

The Clinchfield provides connections at its northern end with the Louisville & Nashville and Chesapeake & Ohio, enabling it to reach the leading markets in the Central West.

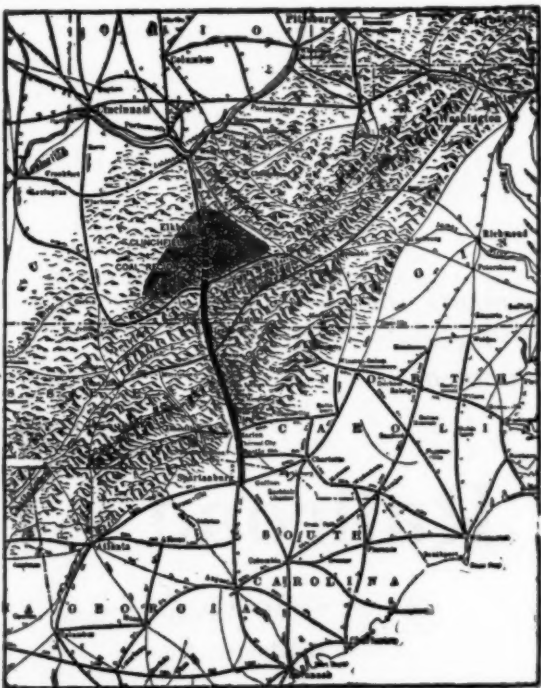
The Clinchfield crosses the Norfolk & Western and the Southern railways, which give an outlet to the markets of the North on the one hand and the South and Southwest on the other.

The Clinchfield has connections at its southern end with the Seaboard Air Line, the Atlantic Coast Line and the Southern Railway, and through them with the other principal railroads of the South, enabling it to thoroughly cover this growing section.

The Clinchfield has direct connections with the important Southern seaports, and through them with the leading markets of the world.

The Clinchfield passes through portions of Eastern Kentucky, Southwestern Virginia, Eastern Tennessee and Western North and South Carolina, all of which possess, in a practically virgin state, valuable resources of minerals, timber, water-powers and rich farming and fruit-growing lands.

The Clinchfield's territory offers an abundance of varied raw materials, a plentiful supply of white labor, an ideal climate and the best of railroad facilities.



*Send for our booklet "The Land of Opportunities," which illustrates and describes the country along the Clinchfield Route and tells of its opportunities.*

## Carolina, Clinchfield & Ohio Rwy.

**"THE ROAD OF OPPORTUNITY"**

R. F. BREWER, Industrial Agent

Johnson City, Tenn.

## Far Reaching Importance of West Virginia's Diversified Raw Materials

**Coal****Natural Gas****Limestone****Petroleum****Iron Ore****Glass Sand****Clay****Shale**

What a wonderful array of resources for the establishment of industrial operations in infinite variety.

These are the leading mineral deposits of West Virginia and they exist in practically inexhaustible supply, and are all of a chemical purity that classifies them as especially desirable for the manufacture of the highest grade of products.

Of all these resources, coal is the only one that has been developed at all in keeping with its vast importance, so that most attractive opportunities are available for manufacturers.

Then consider the location of these raw materials. Just where they can be developed to the fullest advantage and finished products quickly distributed to the leading industrial and consuming sections of the country.

The B. & O., by reason of its complete rolling stock and its extensive trackage throughout that part of the State where the resources occur in great abundance, offers established railroad facilities to reach the large markets of this country and through its large tidewater terminals the important sources of demand from foreign countries.

Before deciding upon the location for your new industry or the building of a branch plant you should investigate what West Virginia has to offer.

Bearing directly upon this is the fact that a large national industry having a big plant in West Virginia decided to enlarge, and carefully considered available sites throughout the country, but eventually located its new plant within 8 miles of the old one.

What stronger evidence regarding our claims for West Virginia could be made?

*Through its Industrial and Agricultural Departments the B. & O.  
would like to discuss the scope and value of West Virginia's resources  
and the many opportunities they offer for development.*

## Baltimore & Ohio Railroad

J. H. STEWART, Agricultural Agent  
Morgantown, W. Va.

W. W. WOOD, Industrial Agent  
Baltimore, Md.



# DAIRYING PROFITABLE FLORIDA

The dairying industry in Florida is an open opportunity and can be greatly expanded.

A 350-day crop-growing season brings to your mind the readiness with which the dairy cow can be maintained, and the production of green foods for that purpose.

The silo brought wealth to Western States, and will do the same in Florida's favored clime.

The markets for the production are wide and the supply inadequate. The growth of cities and towns, the expansion of cultivated area, the influx of winter visitors, are some of the factors of interest.

The chance for splendid returns in various sections can be readily determined.

Artesian water in abundance;

A pleasant year-'round climate;

A soil advantage nowhere else obtainable;

A market ever widening;

are some of the reasons for giving this subject careful consideration.

We would like to send you copy of an impartial article showing what a South Florida dairy has accomplished.

## SEABOARD AIR LINE RAILWAY

The Progressive Railway of the South

J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

## CLASSIFIED INDEX OF ADVERTISEMENTS.

**Abrasive Materials.**

Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.

**Accountants.**

Baltimore Audit Co., Baltimore, Md.  
Beaman, R. J., Cincinnati, Ohio.

**Accumulator. (Hydraulic.)**

The French Oil Mill Mch. Co., Piqua, Ohio.

**Adding Machines.**

Burroughs Adding Machine Co., Detroit, Mich.

**Agricultural Implements.**

Myers & Bro., F. E. Ashland, O.

**Air Compressors. (Stationary and Portable.)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
American Compressor & Pump Co., Baltimore, Md.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Clayton Air Compressor Works, Cambridge, Mass.  
General Electric Co., Schenectady, N. Y.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Laidlaw-Dunn-Gardner Co., Cincinnati, Ohio.  
Union Steam Pump Co., Battle Creek, Mich.

**Aluminum Products. (Bars, Sheets, Tubes.)**

Aluminum Company of America, Pittsburgh, Pa.

**Ammonia Valves and Fittings.**

Frick Co., The, Waynesboro, Pa.  
York Mfg. Co., York, Pa.

**Anti-Friction Metals.**

Bailey-Lebby Co., Charleston, S. C.  
Dodge Mfg. Co., Milwaukee, Ind.  
Wolf Metal Co., Cincinnati, Ohio

**Architects.**

Diehl, Wm. Newton, Norfolk, Va.  
Gatlin, W. R., Hopkinsville, Ky.  
Hunt, R. H., Chattanooga, Tenn.  
James, Fred, J., Tampa, Fla.  
Millburn, Heister & Co., Washington, D. C.  
Robinson, W. F., Greensboro, N. C.  
Sirrino, J. E., Greenville, S. C.

**Architects' Supplies.**

Starrett Co., L. S., Athol, Mass.  
Weber & Co., F., Philadelphia, Pa.

**Architectural Iron Work.**

Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Snead Architectural Iron Wks., Louisville, Ky.

**Arc Lamps. (See Lamps) [Arc and Incandescent.]****Art Glass.**

Binswanger & Co., Memphis, Tenn.

**Asbestos.**

Asbestos Protected Metal Co., Beaver Falls, Pa.  
Johns-Manville Co., H. W., New York, N. Y.  
Southern Asbestos Mfg. Co., Inc., Richmond, Va.

**Asbestos Products.**

Asbestos Protected Metal Co., Beaver Falls, Pa.

**Asphalt.**

Barber Asphalt Paving Co., Philadelphia, Pa.  
Gulf Refining Co., Pittsburg, Pa.  
U. S. Asphalt Refining Co., New York, N. Y.

**Asphalt Mixers.**

Erie Machine Shops, Erie, Pa.  
Smith Co., T. L., Atlanta, Ga.

**Asphalt Paving Plants.**

Cumner & Son Co., F. D., The., Cleveland, Ohio.

**Auctioneers.**

Freeman & Co., Samuel T., Philadelphia, Pa.

**Automobiles. (Electric Passenger.)**

General Vehicle Co., Long Island City, N. Y.

**Automobiles. (Second Hand.)**

Mar-Dei Mobile Co., Baltimore, Md.

**Axles. [See Car Wheels, Axles and Trucks.]**

Babbitt Metal. [See Anti-Friction Metal.]

**Balls.**

Fanner Mfg. Co., The, Cleveland, Ohio.

**Bakelite Dilecto.**

Continental Fibre Co., Newark, Del.

**Bakers' Machinery.**

Lynn-Superior Co., The, Cincinnati, O.

**Bankers and Brokers.**

Breed, Elliott & Harrison, Cincinnati, Ohio.  
Delaware Trust Co., Wilmington, Del.  
Electric Bond & Share Co., New York, N. Y.  
Glenn, W. S., Spartanburg, S. C.  
Halsey & Co., N. W., New York, N. Y.  
Lisman & Co., F. J., New York, N. Y.  
Mercantile Trust & Deposit Co., Balto., Md.  
New First National Bank, Columbus, O.  
Nureen & Co., John, Chicago, Ill.  
Peabody, Houghteling & Co., Chicago, Ill.  
Southern States Develop'mt Co., New York, N. Y.  
Tillotson and Wolcott Co., The, Cleveland, Ohio.

**Banks.**

First National Bank, Baltimore, Md.  
First Nat'l Bank, of Key West, Key West, Fla.  
First National Bank, Richmond, Va.  
Merchants-Mechanics' Nat'l Bank, Baltimore, Md.  
New First National Bank, Columbus, Ohio.  
National Exchange Bank, Baltimore, Md.  
Provident Savings Bank & Trust Co., Cincinnati, O.

**Bank and Office Railings and Grilles. (Iron)**

Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Baggott & Co., Baltimore, Md.  
Meyers Mfg. Co., F. J., Hamilton, O.  
Ohio Elevator & Machine Co., The, Columbus, O.  
Tillotson and Wolcott Co., The, Cleveland, Ohio.

**Barges.**

American Bridge Co., of New York, N. Y.

**Bar Iron. (Refined and Galvanized.)**

Bourne-Fuller Co., The, Cleveland, Ohio.  
Carnegie Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.

**Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)**

American Steel & Wire Co., Chicago, Ill.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Gulf States Steel Co., Birmingham, Ala.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Laclede Steel Co., St. Louis, Mo.

**Bead. (Metal Corner.)**

Penn Metal Co., Boston, Mass.

**Bearings. (Oilless.)**

Metaline Co., Long Island City, N. Y.

**Bedford Stone**

Bedford Steam Stone Works, Bedford, Ind.

**Bells and Gongs.**

National Tube Co., Pittsburgh, Pa.

**Belting. (Leather, Canvas, Rubber.)**

American Supply Co., Providence, R. I.  
Bailey-Lebby Co., Charleston, S. C.  
Baltimore Belting Co., Baltimore, Md.  
Cameron & Barkley Co., Charleston, S. C.  
Chesapeake Belting Co., Baltimore, Md.  
Druid Oak Belting Co., Inc., Baltimore, Md.  
Gandy Belting Co., Baltimore, Md.

Goodyear Tire & Rubber Co., Akron, Ohio.  
Graton & Knight Mfg. Co., Worcester, Mass.  
Main Belting Co., Phila., Pa.  
Philadelphia Belting Co., Philadelphia, Pa.  
Schieren Co., Chas. A., New York, N. Y.  
Smith-Courtney Co., Richmond, Va.

**Belting. (Chain.)**

Bartlett & Snow Co., C. O., Cleveland, O.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Jeffery Mfg. Co., Columbus, O.  
Link-Belt Co., Nicetown, (Philadelphia) Pa.

**Belting. (Cotton.)**

Scan'anavia Belting Co., New York, N. Y.

**Belt Conveyors.**

Jeffery Mfg. Co., Columbus, O.  
Scandinavia Belting Co., New York, N. Y.

**Belt Dressing.**

Dixon Crucible Co., Joseph, Jersey City, N. J.  
Gandy Belting Co., Baltimore, Md.  
Graton & Knight Mfg. Co., Worcester, Mass.  
Philadelphia Belting Co., Philadelphia, Pa.  
Scandinavia Belting Co., New York, N. Y.

**Belt Lacing and Supplies.** [See Belting.  
Leather, Canvas, Rubber.]

**Bicarbonate Soda. (Sap Stain Lumber Dip.)**

Church & Dwight Co., New York, N. Y.  
Mathieson Alkali Works, Saltville, Va.

**Blackboards. (Slate.)**

East Bangor Con. Slate Co., The, East Bangor, Pa.  
Johnson, E. J., New York, N. Y.

**Blocks. (Paving Crocoted.)**

American Crocote Works, New Orleans, La.

**Block Fillers**

Barber Asphalt Paving Co., Phila. Pa.  
Barrett Mfg. Co., Phila. Pa.  
Standard Oil Co., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.

**Blowers and Exhaust Fans.**

American Blower Co., Detroit, Mich.  
Buffalo Forge Co., Buffalo, N. Y.  
De Laval Steam Turbine Co., Trenton, N. J.  
General Electric Co., Schenectady, N. Y.  
Green Fuel Economizer Co., Matteawan, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

**Boilers.**

Abendroth & Root Mfg. Co., Newburgh, N. Y.  
Babcock & Wilcox Co., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Casey-Hedger Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Coatesville Boiler Works, Coatesville, Pa.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Erie City Iron Works, Erie, Pa.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Harris Bros. Co., Chicago, Ill.  
Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E. Williamsport, Pa.  
Keystone Boiler & Foundry Co., Columbia, Pa.  
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.  
Lombard Iron Works, Augusta, Ga.  
Mecklenburg Iron Works, Charlotte, N. C.  
Murray Iron Works, Burlington, Ia.  
New York Central Iron Works, Hagerstown, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Price Machinery Co., S. M., Norfolk, Va.  
Schofield Iron Works, Macon, Ga.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Vogt Machine Co., Henry, Louisville, Ky.  
Walsh & Weidner Boiler Co., Chattanooga, Tenn.

**Boiler Covering.**

Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.

**Boiler Graphite.**

Dixon Crucible Co., Joseph, Jersey City, N. J.

**Boiler Tubes. [See Tubes, Boiler.]**

Bolts, Nuts, Rivets, Studs and Washers.  
Lebanon Valley Iron & Steel Co., Lebanon, Pa.  
Milton Mfg. Co., Milton, Pa.  
Progressive Mfg. Co., Torrington, Conn.  
Republic Iron & Steel Co., Youngstown, O.  
Upson Nut Co., The, Cleveland, O.

**Bonds. (Surety, etc.)**

Fidelity & Deposit Co. of Balto., Baltimore, Md.

**Bottling Outfits.**

Viller Mfg. Co., Milwaukee, Wis.

**Brass Goods.**

Bailey-Lebby Co., Charleston, S. C.  
Buckeye Iron & Brass Works, Dayton, O.  
Lunkenheimer Co., The, Cincinnati, Ohio  
Powell Co., Wm., Cincinnati, O.

**Brass Railing and Grilles.**

Newman Mfg. Co., Cincinnati, Ohio

**Brewers' Machinery.**

Viller Mfg. Co., Milwaukee, Wis.

**Brick. (Acid.)**

Hood Brick Co., B. Mifflin, Atlanta, Ga.

**Brick. (Building.)**

Am. Enamelled Brick & Tile Co., New York, N. Y.  
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.

**Brick. (Enamelled.)**

Am. Enamelled Brick & Tile Co., New York, N. Y.

**Brick. (Fire.)**

Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.

**Brick. (Magnesia.)**

Harbison-Walker Refractories Co., Pittsburgh, Pa.

**Brick. (Paving.)**

Carlyle Paving Brick Co., Portsmouth, O.  
Copeland-Ingles Shale Brick Co., Birmingham, Ala.  
Dunn Wire-Cut-Tag Brick Co., Connecticut, Ohio  
Southern Clay Mfg. Co., Chattanooga, Tenn.  
Standard Brick Co., Macon, Ga.

**Brick. (Silica.)**

Harbison-Walker Refractories Co., Pittsburgh, Pa.

**Brick and Clayworking Machinery and Supplies.**

Chase Fdry. & Mfg. Co., Columbus, O.  
Fernholts Brick Machinery Co., St. Louis, Mo.  
Freese & Co., E. M., Galton, O.  
Steele & Sons, J. C., Stateville, N. C.

**Bridges. (Concrete.)**

Luten, Daniel B., Indianapolis, Ind.  
Requarth Co., O. W., Charlotte, N. C.  
Turner, C. A. F., Minneapolis, Minn.

**Bridges. (Rolling Lift.)**

Scherzer Rolling Lift Bridge Co., Chicago, Ill.

**Bridges. (Steel.)**

American Bridge Co. of New York, N. Y.  
Austin Bros., Atlanta, Ga.  
Belmont Iron Works, Philadelphia, Pa.  
Champion Bridge Co., Wilmington, Ohio.  
Chicago Bridge & Iron Works, Chicago, Ill.  
East St. Louis Bridge Co., East St. Louis, Ill.  
Oreosonia Bridge Co., Lebanon, Ohio.  
Richmond Structural Steel Co., Richmond, Va.  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.

**Bridge and Structural Iron Paints.**

Chattanooga Paint Co., Chattanooga, Tenn.

**Brimstone.**

Union Sulphur Co., New York, N. Y.

**Brushes.**

Felton Brush Co., D. D., The, Atlanta, Ga.

**Buckets. (Bottom-dumping for Concrete, Fertilizer, etc.)**

Stuebner Iron Works, G. L., Long Island City, N. Y.

**Buckets. (Clam Shell, Orange Peel, etc.)**

Austin Machinery Co., W. E., Atlanta, Ga.  
Hayward Company, New York, N. Y.  
Williams Company, G. H., Cleveland, Ohio.

**Buckets. (Dredging, Excavating, Sewer, etc.)**

Hayward Co., New York, N. Y.  
Monaghan Mch. Co., Chicago, Ill.  
Williams Co., The G. H., Cleveland, O.

**Buckets. (Grab.)**

Hunt Co., Inc., C. W., West New Brighton, N. Y.

**Buckets. (Ore Handling.)**

Caldwell & Son Co., H. W., Chicago, Ill.  
Hayward Co., New York, N. Y.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Smith Co., T. L., Atlanta, Ga.  
Williams Co., The G. H., Cleveland, O.

**Buhr Stones.**

Star Co., B. F., Baltimore, Md.

**Builders and Contractors.**

Austin Bros., Atlanta, Ga.  
Caldwell-Wingate Co., Atlanta, Ga.  
Grandy, C. F., Greenville, S. C.  
Selden-Breck Construction Co., St. Louis, Mo.  
Stone & Webster Eng. Corp., Boston, Mass.  
Turner, C. A. F., Minneapolis, Minn.  
White Companies, J. G., New York, N. Y.

**Building Stone.**

Bedford Steam Stone Works, Bedford, Ind.

**Building Supplies.**

Harris Bros. Co., Chicago, Ill.  
Southern Building Material Co., Norfolk, Va.

**Burners. (Oil.) [See Fuel Oil Equipments.]****Bushings. (Oilless, for Loose Pullers.)**

Metaline Co., Long Island City, N. Y.

**Cables.**

American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Roebbing's Sons Co., John A., Trenton, N. J.  
Williamsport Wire Rope Co., Williamsport, Pa.

**Cables. (Underground.)**

American Steel & Wire Co., Chicago, Ill.  
Safety Insulated Wire & Cable Co., New York, N. Y.

**Cables and Wires. (Insulated.)**

Safety Insulated Wire & Cable Co., New York, N. Y.

**Cableways. (Overhead Suspension.)**

American Steel & Wire Co., Chicago, Ill.  
Austin Machinery Co., W. E., Atlanta, Ga.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Flory Mfg. Co., S., Bangor, Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Roebbing's Sons Co., John A., Trenton, N. J.

**Can and Box Making Machinery. (Tin.)**

Bliss Co., E. W., Brooklyn, N. Y.

**Canning Machinery and Supplies.**

Robins & Co., A. K., Baltimore, Md.  
Sprague Canning Machinery Co., Chicago, Ill.

**Caps. (Roofing.)**

Robertson Steel & Iron Co., W. F., Cincinnati, O.

**Carborundum Paper and Cloth.**

Carborundum Co., Niagara Falls, N. Y.

**Cars. (Dump, Industrial, Logging and Mine.)**

Austin Mfg. Co., Chicago, Ill.  
Chase Fdry. & Mfg. Co., Columbus, O.  
Curd, Geo. E., Cincinnati, Ohio  
Easton Car & Construction Co., Easton, Pa.  
Electric Wheel Co., Quincy, Ill.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hunt Co., C. W., Inc., West New Brighton, N. Y.  
River Mfg. Co., Wm., Knoxville, Tenn.  
Smith Co., T. L., Atlanta, Ga.  
Western Wheeled Scraper Co., Aurora, Ill.

**Cars. (Motor, Gasoline.)**

White Co., The, Cleveland, Ohio.

**Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]****Car Wheels, Axles and Trucks.**

Carnegie Steel Co., Pittsburgh, Pa.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.

**Cast Iron Pipe. (See Pipe.) [Cast Iron.]**

Aluminum Company of America, Pittsburgh, Pa.

**Castings. (Aluminum.)**

McKenna Bros. Brass Co., Pittsburgh, Pa.

**Castings. (Brass and Bronze.)**

Triumph Electric Co., Cincinnati, O.

**Castings. (Gray Iron.)**

Columbian Iron Works, Chattanooga, Tenn.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Lynchburg Foundry Co., Lynchburg, Va.  
Phoenix Iron Works Co., Meadville, Pa.  
Pole Engineering & Machine Co., Baltimore, Md.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Westbrook Elevator Co., Danville, Va.  
Withers Fdry. & Mch Wks., Atlanta, Ga.

**Castings. (Malleable Iron and Steel.)**

Columbus Malleable Iron Co., Columbus, Ohio.

**Castings. (Municipal.)**

Chickasaw Iron Work, Memphis, Tenn.

**Castings. (Steel.)**

Allen American Manganese Steel Co., Edgar, Chicago, Ill.  
Crucible Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Riverside Steel Casting Co., Newark, N. J.

**Ceilings. (Metal.)**

Edwards Manufacturing Co., Cincinnati, O.  
Koughley Metal Cell. & Mfg. Co., S., Pittsburgh, Pa.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.  
Milwaukee Corrugating Co., Milwaukee, Wis.

**Cement**

Clinchfield Portland Cem. Corp., Kingsport, Tenn.  
Dixie Portland Cement Co., Chattanooga, Tenn.  
Hartranft Cement Co., Wm. G., Philadelphia, Pa.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.  
Kosmos Portland Cement Co., Inc., Louisville, Ky.  
Lehigh Portland Cement Co., Allentown, Pa.  
Security Cement & Lime Co., Hagerstown, Md.  
Southern States Portland Cem. Co., Rockmart, Ga.  
Standard Portland Cement Co., Leeds, Ala.

**Cement Machinery.**

Alsing Engineering Co., J. R., New York, N. Y.  
Power & Mining Machinery Co., Oudry, W.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

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**Contractors. (Hydro-Electric Developments.)**

Requarth Co., C. W., Charlotte, N. C.

**Contractors. (Water Supply.)**

Layne &amp; Bowler Co., Houston, Tex.

**Contractors' Machinery and Supplies. [See also Hoisting Machinery.]**

American Clay Machinery Co., The Bucyrus, Ohio.

American Hoist &amp; Derrick Co., St. Paul, Minn.

American Locomotive Co., New York, N. Y.

Austin Machinery Co., W. E., Atlanta, Ga.

Austin Mfg. Co., Chicago, Ill.

Byers Mach. Co., The John F., Ravenna, O.

Contractors' Service Co., New York, N. Y.

Curd, Geo. H., Cincinnati, O.

Parquhar Mfg. Co., Ltd., A. B., York, Pa.

Flory Mfg. Co., S., Bangor, Pa.

Hydro Bros. Steel &amp; Rail Co., Pittsburgh, Pa.

Marine Metal &amp; Supply Co., New York, N. Y.

Milburn Co., Alex. N., Baltimore, Md.

Monaghan Mch. Co., Chicago, Ill.

National Hoisting Engine Co., Harrison, N. J.

Oliver Mfg. Co., Wm. J., Knoxville, Tenn.

Pipe &amp; Contractors' Supply Co., New York, N. Y.

Sherwood, C. O., New York, N. Y.

Smith Co., T. L., Atlanta, Ga.

Southern Mch. &amp; Equipment Co., Lynchburg, Va.

Sterling Machinery Co., New York, N. Y.

**Conveying and Elevating Machinery.**

Austin Machinery Co., W. E., Atlanta, Ga.

Bartlett &amp; Snow Co., C. O., Cleveland, O.

Caldwell &amp; Son Co., H. W., Chicago, Ill.

Flory Mfg. Co., S., Bangor, Pa.

Guarantee Construction Co., New York, N. Y.

Hunt Co., C. W., Inc., West New Brighton, N. Y.

Jeffrey Mfg. Co., Columbus, O.

Lidgerwood Mfg. Co., New York, N. Y.

Link-Belt Co., Nicetown, (Philadelphia) Pa.

Mathews Gravity Carrier Co., Ellwood City, Pa.

McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

**Copperage, Stock and Box Shook Machinery.**

Gerlach Co., Peter, Cleveland, O.

**Coppersmiths.**

Hoffman-Ablers Co., Cincinnati, Ohio.

McMillan Bros., Jacksonville, Fla.

**Cordage.**

American Mfg. Co., Brooklyn, N. Y.

Broderick &amp; Bascom Rope Co., St. Louis, Mo.

Columbian Rope Co., Auburn, N. Y.

International Cotton Mills, New York, N. Y.

Plymouth Cordage Co., North Plymouth, Mass.

St. Louis Cordage Mills St. Louis, Mo.

Waterbury Co., New York, N. Y.

**Core Ovens.**

Oren Equipment &amp; Mfg. Co., The, New Haven, Conn.

**Corner Bead. (Metal.)**

Penn Metal Co., Boston, Mass.

**Corn-Mill Machinery.**

Kordyke &amp; Marmon Co., Indianapolis, Ind.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Starr Co., B. F., Baltimore, Md.

Wolf Co., Chambersburg, Pa.

**Cotton Duck.**

International Cotton Mills, New York, N. Y.

**Cotton Oil and Products.**

American Cotton Oil Co., New York, N. Y.

**Cotton Yarns. (Commission Merchants.)**

Paision, Linkroom &amp; Co., New York, N. Y.

**Cotton-Gin Machinery.**

Carver Cotton Gin Co., East Bridgewater, Mass.

Continental Gin Co., Birmingham, Ala.

Gibbs Machinery Co., Inc., Columbia, S. C.

Murray Co., The, Atlanta, Ga.

**Cotton-Mill Machinery.**

Draper Co., Hopedale, Mass.

Mason Machine Works, Taunton, Mass.

Saco-Lowell Shop, Boston, Mass.

Whitinsville Spin'g Ring Co., Whitinsville, Mass.

**Cotton-Mill Supplies.**

American Supply Co., Providence, R. I.

Whitinsville Spin'g Ring Co., Whitinsville, Mass.

**Cottonseed-Oil Machinery.**

Buckeye Iron &amp; Brass Works, Dayton, O.

Burruss Engineering Co., Atlanta, Ga.

Cardwell Machine Co., Richmond, Va.

Carver Cotton Gin Co., East Bridgewater, Mass.

Continental Gin Co., Birmingham, Ala.

French Oil Mill Machinery Co., Piquet, O.

Murray Co., The, Atlanta, Ga.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

**Counting and Weighing Machines. (For Industrial Plants.)**

National Scale Co., Chicopee Falls, Mass.

**Couplings.**

American Spiral Pipe Works, Chicago, Ill.

Golden's Foundry &amp; Machine Co., Columbus, Ga.

Wood's Sons Co., T. B., Chambersburg, Pa.

**Couplings. (Car.)**

National Tube Co., Pittsburgh, Pa.

Weimer Chain &amp; Iron Co., Lebanon, Pa.

**Couplings. (Hose, Air, Gas, Steam and Water.)**

National Tube Co., Pittsburgh, Pa.

**Coverings. (Pipe, Boiler, etc.)**

Johns-Manville Co., H. W., New York, N. Y.

Southern Asbestos Mfg. Co., Inc., Richmond, Va.

**Cranes. (Locomotive.)**

American Hoist &amp; Derrick Co., St. Paul, Minn.

Ohio Locomotive Crane Co., Bucyrus, O.

**Cranes. (Traveling, Hand, Power, Hydraulic.)**

Lane Mfg. Co., Montpelier, Vt.

Spindel, J. G., Reading, Pa.

**Crays.**

Georgia Talc Co., Asheville, N. C.

Lowell Crayon Co., Lowell, Mass.

**Cresosoting Equipment.**

Casey-Hedges Co., Chattanooga, Tenn.

Struthers-Wells Co., Warren, Pa.

Walsh &amp; Weider Boiler Co., Chattanooga, Tenn.

**Cresosoting Works.**

American Cresosote Works, New Orleans, La.

Internat'l Cresosote &amp; Cons. Co., Galveston, Tex.

National Lumber &amp; Cresos. Co., Texarkana, Ark.

Southern Cresosoting Co., Ltd., Slidell, La.

Southern Wood Preserving Co., Atlanta, Ga.

**Crossarms and Pins.**

Western Electric Co., New York, N. Y.

**Crossarms. (Cresosoted.)**

American Cresosote Wks., New Orleans, La.

Internat'l Cresosoting &amp; Cons. Co., Galveston, Tex.

National Lumber &amp; Cresosoting Co., Texarkana, Ark.

Southern Cresosoting Co., Ltd., Slidell, La.

Southern Wood Preserving Co., Atlanta, Ga.

**Crossings. (See Railroad Frogs and Switches.)****Crosstie Machine.**

Standard Portable Saw Mill Co., New Orleans, La.

**Crossties. (Cresosoted.)**

American Cresosote Works, New Orleans, La.

Internat'l Cresosote &amp; Cons. Co., Galveston, Tex.

National Lumber &amp; Cresos. Co., Texarkana, Ark.

Southern Cresosoting Co., Ltd., Slidell, La.

Southern Wood Preserving Co., Atlanta, Ga.

**Crossties. (Steel.)**

Carnegie Steel Co., Pittsburgh, Pa.

**Crushed Stone.**

American Ballast Co., Knoxville, Tenn.

Balfour Quarry Co., Asheville, N. C.

Chickamauga Quarry &amp; Construction Co., Chattanooga, Tenn.

Kirkpatrick Sand &amp; Cement Co., Birmingham, Ala.

Weston Brook Quarry Co., Columbia, S. C.

**Crushers. (Corn and Cob.)**

Grueindler Pat. Crusher &amp; Pulv. Co., St. Louis, Mo.

Jeffrey Mfg. Co., Columbus, O.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

**Crushers. (Rock.)**

Austin Machinery Co., W. E., Atlanta, Ga.

Austin Mfg. Co., Chicago, Ill.

Buchanan Co., Inc., C. G., New York, N. Y.

Power &amp; Mining Machinery Co., Oudah, Wis.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Smith Co., T. L., Atlanta, Ga.

Universal Road Mch. Co., Kingston, N. Y.

Western Wheeled Scraper Co., Aurora, Ill.

Wheeling Mold &amp; Fdry. Co., Wheeling, W. Va.

**Crushing and Pulverizing Machinery.**

Aising Engineering Co., J. R., New York, N. Y.

Austin Machinery Co., W. E., Atlanta, Ga.

Austin Mfg. Co., Chicago, Ill.

Bartlett &amp; Snow Co., C. O., Cleveland, O.

Buchanan Co., Inc., C. G., New York, N. Y.

Grueindler Pat. Crusher &amp; Pulv. Co., St. Louis, Mo.

Jeffrey Mfg. Co., Columbus, O.

McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Stedman's Foundry &amp; Machine Works, Aurora, Ind.

Western Wheeled Scraper Co., Aurora, Ill.

Wheeling Mold &amp; Fdry. Co., Wheeling, W. Va.

**Culvert Pipe. (Cast Iron.)**

American Cast Iron Pipe Co., Birmingham, Ala.

Clow &amp; Sons, James B., Chicago, Ill.

Donaldson Iron Co., Emaus, Pa.

Glanorgon Pipe &amp; Foundry Co., Lynchburg, Va.

Lynchburg Foundry Co., Lynchburg, Va.

Buchanan Co., Inc., C. G., New York, N. Y.

Grueindler Pat. Crusher &amp; Pulv. Co., St. Louis, Mo.

Jeffrey Mfg. Co., Columbus, O.

McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Stedman's Foundry &amp; Machine Works, Aurora, Ind.

Western Wheeled Scraper Co., Aurora, Ill.

Wheeling Mold &amp; Fdry. Co., Wheeling, W. Va.

**Culverts. (Corrugated Metal.)**

American Sheet &amp; Tin Plate Co., Pittsburgh, Pa.

Armco Culvert Publicity Bureau, Cincinnati, O.

Atlas Metal Works, Dallas, Tex.

Birmingham Metal Products Co., Birmingham, Ala.

Canton Culvert Co., The, Canton, O.

Dixie Culvert &amp; Metal Co., Atlanta, Ga.

Lunkenheimer Co., The, Cincinnati, O.

Gallon Iron Works &amp; Mfg. Co., The, Gallon, Ohio.

Harry Bros. Co., Newport, Ky.

Lone Star Culvert Co., Houston, Tex.

National Corrugated Culvert Mfg. Co., Warren, Pa.

New Orleans Roofing &amp; Metal Wks., New Orleans, La.

Salsbury Metal Culvert Co., Inc., Salisbury, N. C.

Tennessee Metal Culvert Co., Nashville, Tenn.

Virginia Metal &amp; Culvert Co., Inc., Roanoke, Va.

**Culverts. (Vitrified Pipe.)**

Bibb Sewer Pipe Co., Macon, Ga.

Southern Sewer Pipe Co., Birmingham, Ala.

Stevens Sons Co., H., Macon, Ga.

**Cupola Furnaces.**

Paxson Co., J. W., Philadelphia, Pa.

**Curb Protector. (Steel.)**

Steel Protected Concrete Co., Philadelphia, Pa.

**Cuts. (Half-tone, Line, etc.)**

Baltimore-Md. Engraving Co., Baltimore, Md.

**Cutter Heads. (Woodworking.)**

Shimer &amp; Sons, Samuel J., Milton, Pa.

**Cutter Grinders.**

Vitrified Wheel Co., Westfield, Mass.

**Dams. (Reinforced Concrete.)**

Berry-Fortune Construction Co., Eatonton, Ga.

**Derricks and Derrick Fittings.**

American Hoist &amp; Derrick Co., St. Paul, Minn.

Byers Mach. Co., The John F., Ravenna, O.

Hayward Co., The, New York, N. Y.

Monaghan Machine Co., Chicago, Ill.

Saggen Derrick Co., Chicago, Ill.

**Designers and Illustrators. (Printed Matter.)**

Baltimore, Md. Engraving Co., Baltimore, Md.

**Distilling Apparatus.**

Hoffman-Ablers Co., Cincinnati, Ohio.

**Ditching Machinery.**

American Hoist &amp; Derrick Co., St. Paul, Minn.

American Locomotive Co., New York, N. Y.

Fairbanks Steam Shovel Co., Marion, O.

Gade Excavating Co., The, Iowa Falls, Iowa.

Hayward Co., The, New York, N. Y.

Marion-Osgood Co., Marion, O.

Marion Steam Shovel Co., Marion, O.

Monaghan Machine Co., Chicago, Ill.

Williams Co., The, G. H., Cleveland, O.

**Doors. (Steel Rolling.)**

Kinneer Mfg. Co., Columbus, O.

**Doors. (Tin Clad.)**

Victor Mfg. Co., Newburyport, Mass.

**Doors, Sash and Blinds.**

Columbus Iron Works, Columbus, Ga.

**Draftsmen's Supplies.**

Weber &amp; Co., P., Philadelphia, Pa.

**Dredge Chains.**

Weimer Chain &amp; Iron Co., Lebanon, Pa.

**Dredge Cutters.**

Norborn Engineering Co., Philadelphia, Pa.

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**Drills. (Electric.)**

Fort Wayne Electric Works, Fort Wayne, Ind.

**Drills. (Pneumatic.) [See also Drills Rock and Mining.]**

Fort Wayne Electric Works, Madison, Wis.

Keystone Steam Well Mach. Co., Beaver Falls, Pa.

**Drills. (Rock and Mining.)**

Fort Wayne Electric Works, Madison, Wis.

Independent Pneumatic Tool Co., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Wickes Bros., Jersey City, N. J.

**Drills. (Twist.)**

McKenna Bros. Brass Co., Pittsburgh, Pa.

Morse Twist Drill &amp; Mch. Co., New Bedford, Mass.

**Drive Well Points and Well Supplies.**

National Tube Co., Pittsburgh, Pa.

**Drop Forgings.**

American Spiral Pipe Works, Chicago, Ill.

**Drop Forging Machinery.**

Bliss Co. E. W., Brooklyn, N. Y.

**Dry Docks. (Builders of)**

American Bridge Co. of New York, N. Y.

**Drying Machinery.**

American Process Co., New York, N. Y.

Bailey-Lobby Co., The, Charleston, S. C.

Buffalo Forge Co., Buffalo, N. Y.

Coatesville, Boiler Works, Coatesville, Pa.

Cummer &amp; Son Co., F. D., The, Cleveland, Ohio

Hersey Manufacturing Co., South Boston, Mass.

Oven Equipment &amp; Mfg. Co., The, New Haven, Conn.

Ruggles-Coles Engineering Co., New York, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

**Dry Kilns.**

Buffalo Forge Co., Buffalo, N. Y.

Moore Dry Kiln Co., L., Jacksonville, Fla.

**Dry Kiln Equipment.**

Moore Dry Kiln Co., L., Jacksonville, Fla.

**Dumbwaiters. (Hand Power.)**

McKenna Bros. Brass Co., Pittsburgh, Pa.

Speidel, J. G., Reading, Pa.

**Dump Wagons and Wagon Boxes.**

Troy Wagon Works Co., Troy, O.

**Dust-Collecting Systems.**

Buffalo Forge Co., Buffalo, N. Y.

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Steinmetz, C. M., Washington, D. C.  
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## MINING.

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## PAVING AND ROAD.

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## PUBLIC SERVICE PROPERTIES.

Day & Zimmerman, Philadelphia, Pa.  
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Maxcy, John Wharton, Houston, Tex.  
Scotfield Engineering Co., Philadelphia, Pa.  
Stone & Webster Engr. Corp., Boston, Mass.  
White Companies, J. G., New York, N. Y.

## REINFORCED CONCRETE. (Bridges, Buildings, etc.)

Cauldwell-Wingate Co., Atlanta, Ga.  
Cummings, F. N. (Taylor), Claremont, Va.  
Foster-Creighton-Gould Co., Nashville, Tenn.  
Guarantee Construction Co., New York, N. Y.  
Luten, Daniel B., Indianapolis, Ind.  
Potter, Alexander, New York, N. Y.  
Requarth Co., C. W., Charlotte, N. C.  
Savannah Eng. & Construction Co., Savannah, Ga.  
Spiker, William C., Atlanta, Ga.  
Steinmetz, C. M., Washington, D. C.  
Tucker & Laxton, Charlotte, N. C.  
White Companies, J. G., New York, N. Y.

## RIVER AND HARBOR.

Gillman, Harry L., Boston, Mass.

## SEWERAGE AND WATER-WORKS.

Baylis, John R., Birmingham, Ala.  
Blair & Drane, Charlotte, N. C.  
Brown & Clarkson, Washington, D. C.  
Bryant, Glauco A., Wilson, N. C.  
Cory-Harrison & Co., San Antonio, Texas.  
Dabney Engineering Co., Memphis, Tenn.  
Firth, Joseph, Charlotte, N. C.  
Ford, Bacon & Davis, New York, N. Y.  
Freeman, Jr., Arthur C., Norfolk, Va.  
Graves Engineering Co., Inc., New York, N. Y.  
Hill, Jr., Nicholas S., New York, N. Y.  
Huston-Kinsley Co., Memphis, Tenn.  
Knowles, Morris, Pittsburgh, Pa.  
Maxcy, John Wharton, Houston, Tex.  
Mayer, J. H., Birmingham, Ala.  
Miller, Hiram, Boston, Mass.  
Myers, E. W., Greensboro, N. C.  
Pew, Arthur, Atlanta, Ga.  
Potter, Alexander, New York, N. Y.  
Quick, Alfred M., Baltimore, Md.  
Stevens, Harry, Washington, D. C.  
Walker Engineering Corp., Tampa, Fla.  
Washington Co., A. H., Charlotte, N. C.  
White Companies, J. G., New York, N. Y.  
White Gilbert C., Charlotte, N. C.  
Wright Engineering Co., San Antonio, Texas.

## STEEL WORK AND ROLLING MILLS.

Smythe Co., The S. R., Pittsburgh, Pa.

## STRUCTURAL STEEL.

Foster-Creighton-Gould Co., Nashville, Tenn.  
Freeman, Jr., Arthur C., Norfolk, Va.  
Shearer, C. E., Memphis, Tenn.  
Solomon-Norcross Co., Atlanta, Ga.  
Spiker, William C., Atlanta, Ga.

## THEATRE CONSTRUCTION.

Gatlin, W. R., Hopkinsville, Ky.

## Engines.

COMPRESSED AIR.  
Dake Engine Co., Grand Haven, Mich.

## GAS AND GASOLINE.

Affiliated Manufacturers Co., Milwaukee, Wis.  
Allis-Chalmers Manufacturing Co., Milwaukee, Wis.  
Cooper Co., C. & G., Mt. Vernon, Ohio.  
Gibbs Machine Co., Inc., Columbia, S. C.  
Heer Engine Co., Portsmouth, O.  
Mietz, A., New York, N. Y.  
Modern Equipment Co., Savannah, Ga.  
Otto Gas Engine Works, Philadelphia, Pa.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Struthers-Wells Co., Warren, Pa.  
Van Duzen, Royce & Co., Columbus, O.  
Westinghouse Machine Co., The, Pittsburgh, Pa.

## OIL.

Holenders Co., The, New York, N. Y.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Heer Engine Co., Portsmouth, Ohio.  
Mietz, A., New York, N. Y.  
Snow Steam Pump Works, The, New York, N. Y.

## STEAM.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.  
American Hoist & Derrick Co., St. Paul, Minn.  
Ball Engine Co., Erie, Pa.  
Buffalo Forge Co., Buffalo, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Cooper Co., C. & G., Mt. Vernon, O.  
Dake Engine Co., Grand Haven, Mich.  
Engberg Electric & Mechanical Works, St. Joseph, Mich.  
Erie City Iron Works, Erie, Pa.  
Farquhar Co., Ltd., A. B., York, Pa.  
Gibbs Machine Co., Inc., Columbia, S. C.  
Griffith & Wedge Co., The, Zanesville, O.  
Griscom-Russell Co., New York, N. Y.  
Harris Bros. Co., Chicago, Ill.  
Houston, Stanwood & Gamble Co., Cincinnati, O.  
Ide & Sons, A. L., Springfield, Ill.  
Lefell & Co., James, Springfield, O.  
Lombard Iron Works, Augusta, Ga.  
Mecklenburg Iron Works, Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Phoenix Iron Works Co., Meadville, Pa.  
Price Machinery Co., S. M., Norfolk, Va.  
Schofield Iron Works, Macon, Ga.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.  
Vilter Mfg. Co., Milwaukee, Wis.  
Westinghouse Machine Co., Pittsburgh, Pa.

## Envelopes.

Young & Selden Co., Baltimore, Md.

## Excavating Machinery.

American Clay Machinery Co., The, Bucyrus, Ohio.  
American Locomotive Co., New York, N. Y.  
Byers Mach. Co., The John F., Ravenna, O.  
Fairbanks Steam Shovel Co., Marion, O.  
Gade Excavating Co., The, Iowa Falls, Iowa.  
Hayward Co., New York, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Lidgerwood Mfg. Co., New York, N. Y.  
Marion-Osgood Co., Marion, O.  
Marion Steam Shovel Co., Marion, O.  
Monaghan Machine Co., Chicago, Ill.  
Morris Machine Works, Baldwinville, N. Y.  
National Hoisting Engine Co., Harrison, N. J.  
Norborn Engineering Co., Philadelphia, Pa.  
Williams Co., The G. H., Cleveland, O.

## Excavators. (Trench.)

Austin Machinery Co., W. E., Atlanta, Ga.  
Fairbanks Steam Shovel Co., Marion, O.  
Gade Excavating Co., The, Iowa Falls, Iowa.  
Hayward Co., The, New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.

## Excelsior Machinery.

Kline, Lewis T., Alpena, Mich.

## Exhaust Heads.

Abendroth & Root Mfg. Co., Newburgh, N. Y.  
American Spiral Pipe Works, Chicago, Ill.

## Exhibits. (Machinery Builders' Equipment and Supplies.)

Builders' Exchange, Baltimore, Md.

## Expansion Joints.

Badger & Sons Co., E. B., Boston, Mass.

## Expanded Metal. [See Lath.]

## Explosives.

Atlas Powder Co., Wilmington, Del.  
Du Pont de Nemours Powder Co., E. I., Wilmington, Del.  
Jefferson Powder Co., Birmingham, Ala.  
Keystone Nat'l. Powder Co., Emporium, Pa.

## Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

## Fans. (Electric.)

General Electric Co., Schenectady, N. Y.  
Robbins & Myers Co., Springfield, O.

## Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

## Fastener Driving Machine. (Corrugated Joint.)

Saranac Machine Co., Benton Harbor, Mich.

## Feed-Water Heaters and Purifiers.

American Water Softener Co., Philadelphia, Pa.  
Blake & Knowles Steam Pump Works, East Cambridge, Mass.  
Erie City Iron Works, Erie, Pa.  
Griscom-Russell Co., New York, N. Y.  
Murray Iron Works Co., Burlington, Ia.  
National Pipe Bending Co., New Haven, Conn.  
Scaife & Sons Co., Wm. H., Pittsburgh, Pa.  
Stewart Heater Co., Buffalo, N. Y.

## Feed-Water Heater and Purifier and Oil Separator Combined.

Blake & Knowles Steam Pump Works, East Cambridge, Mass.

## Felt. (Building, Sheathing.)

Barrett Mfg. Co., Philadelphia, Pa.

## Fencing, Entrance Gates. (Iron, Steel, Wire.)

Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
New Jersey Wire Cloth Co., Trenton, N. J.  
Ohio Elevator & Mach. Co., The, Columbus, O.

## Fertilizer Machy. [See also Phosphate Mch.]

Smith Co., T. L., Atlanta, Ga.  
Stedman's Foundry & Machine Works, Aurora, Ind.  
Vaik & Murdoch Iron Works, Charleston, S. C.

## Fibre. (Vulcanized.)

Continental Fibre Co., Newark, Del.

## Files.

Barnett Co., G. & H., Philadelphia, Pa.  
Nicholson File Co., Providence, R. I.

## Filters. (Water, for Domestic and Industrial Purposes.)

American Water Softener Co., Philadelphia, Pa.  
International Filter Co., Chicago, Ill.  
Lynn-Superior Co., The, Cincinnati, O.  
New York Central Jewell Fil. Co., New York, N. Y.

## Fire Clay. [See Brick, Fire.]

## Fire Door Fixtures.

Richmond Safety Gate Co., Richmond, Ind.  
Victor Mfg. Co., Newburyport, Mass.

## Fire Extinguishers.

Badger & Sons Co., E. B., Boston, Mass.

## Fire Escapes.

Bolles Iron & Wire Works, J. E., Detroit, Mich.

## Fire Places. (Brick and Tile.)

Hood Brick Co., B. Mifflin, Atlanta, Ga.

## Fire Sprinkling Systems.

Globe Automatic Sprinkler Co., Cincinnati, O.

## Fireproof Building Construction. [See Concrete Construction.]

## Fireproof Building Material.

Bannon Pipe Co., Louisville, Ky.  
Johns-Manville Co., H. W., New York, N. Y.

## Fireproof Doors and Shutters.

Kinnear Mfg. Co., Columbus, O.  
Richmond Safety Gate Co., Richmond, Ind.  
Victor Mfg. Co., Newburyport, Mass.

## Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

Fittings. (Wire Rope.)

Waterbury Co., New York, N. Y.

## Fireproofing. (Brick and Tile.)

Hood Brick Co., B. Mifflin, Atlanta, Ga.

## Fixtures. (Electric Lighting.)

Hill & Co., Walter E., Pittsburgh, Pa.  
Wilson-Maitman Electric Co., Baltimore, Md.

## Flanges. (Iron and Steel.)

American Pipe & Construction Co., Phila., Pa.  
American Spiral Pipe Works, Chicago, Ill.  
Dart Mfg. Co., E. M., Providence, R. I.  
Glasgow Pipe & Foundry Co., Lynchburg, Va.  
National Tube Co., Pittsburgh, Pa.  
U. S. Cast Iron Pipe & Fdy. Co., Burlington, N. J.  
Wood & Co., R. D., Philadelphia, Pa.

## Flexible Joints.

Moran Flex. Steam Joint Co., Inc., Louisville, Ky.

## Floor Tile.

Northcross Mantel Co., W. J., Memphis, Tenn.

## Flooring. (Creosoted Block.)

Republic Creosoting Co., Indianapolis, Ind.

## Flooring. (Hardwood, Maple, Oak.)

Nashville Hardwood Flooring Co., Nashville, Tenn.  
Whiting, William S., Asheville, N. C.

## Flour and Grist Mill Machinery and Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.  
Nurdyke & Marmon Co., Indianapolis, Ind.  
Salem Foundry & Machine Works, Salem, Va.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.

## Flue Lining.

Southern Sewer Pipe Co., Birmingham, Ala.

## Forges.

Buffalo Forge Co., Buffalo, N. Y.

## Forgings.

Weimer Chain & Iron Co., Lebanon, Pa.

## Foundations. (Waterproof.)

Requarth Co., C. W., Charlotte, N. C.

## Foundry Equipment and Supplies.

Newport Sand Bank Co., Inc., Newport, Ky.  
Paxson Co., J. W., Philadelphia, Pa.

## Foundry Facings. (Talc and Soapstone.)

Georgia Talc Co., Asheville, N. C.

## Foundry and Machine Shops.

Earle Gear & Machine Co., Philadelphia, Pa.  
Glasgow Pipe & Foundry Co., Lynchburg, Va.  
Golden Foundry & Machine Wks., Columbus, Ga.  
Lombard Iron Works, Augusta, Ga.  
Poole Eng. & Mach. Co., Baltimore, Md.  
Titus, E. E., Petersburg, Va.  
Vaik & Murdoch Iron Works, Charleston, S. C.

## Frogs. [See Railroad Frogs and Switches.]

## Fuel Economizer.

Green Fuel Economizer Co., Matteawan, N. Y.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

## Fuel Oil.

Gulf Refining Co., Pittsburg, Pa.  
U. S. Asphalt Refining Co., New York, N. Y.

## Furnaces. (For Industrial Purposes.)

Smythe Co., The S. R., Pittsburgh, Pa.

## Fuses. (Electrical.)

Economy Fuse & Mfg. Co., Chicago, Ill.

## Fuse Shells. (Renewable.)

Economy Fuse & Mfg. Co., Chicago, Ill.

## Fuses, Bases and Fittings.

Johns-Manville Co., H. W., New York, N. Y.

## Galvanized Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
McCalla, Inc., Harold, Philadelphia, Pa.  
Portsmouth Steel Co., Portsmouth, O.  
Wood Iron & Steel Co., Atlanta, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.

## Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

## Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

## Gas Engines. [See Engines, Gas.]

## Gas Machines.

Kemp Mfg. Co., C. M., Baltimore, Md.  
Milburn Co., Alex. N., Baltimore, Md.

## Gas Plants.

Power & Mining Machinery Co., Cudahy, Wis.  
Western Gas Construction Co., Ft. Wayne, Ind.

## Gas Producers.

Otto Gas Engine Works, Philadelphia, Pa.  
Smythe Co., The S. R., Pittsburgh, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.  
Wood & Co., R. D., Philadelphia, Pa.

## Gasoline and Kerosene.

Gulf Refining Co., Pittsburg, Pa.

## Gas and Steam Fitters' Tools.

Saunders' Sons, D., Yonkers, N. Y.

## Gears.

American Die & Tool Co., Reading, Pa.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Cresson-Morris Co., Philadelphia, Pa.  
Earle Gear & Machine Co., The, Philadelphia, Pa.  
Edgemont Machine Co., Dayton, O.  
James Mfg. Co., D. O., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, O.  
Poole Engineering & Machine Co., Baltimore, Md.

## Generators. (Hot Water.)

Griscom-Russell Co., New York, N. Y.

## Generating Sets.

Engberg Electric & Mechanical Works, St. Joseph, Mich.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.  
Triumph Electric Co., Cincinnati, O.

## Geologists.

Davis, Geo. C., Phila., Pa.  
Froehling & Robertson, Richmond, Va.  
Grimsley, G. P., Martinsburg, W. Va.  
Maynard-Carter, Chattanooga, Tenn.

## Glass. (Plate, etc.)

Binswanger & Co., Memphis, Tenn.

## Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

## Grain Elevator Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Co., Nicetown (Philadelphia), Pa.

## Granite.

Southern Marble & Granite Co., Spartanburg, S. C.

## Graphite.

Dixon Crucible Co., Joseph, Jersey City, N. J.

## Grates and Grate Bars.

Huber Grate Bar & Stoking Co., Baltimore, Md.  
Thomas Grate Bar Co., Birmingham, Ala.

## Gravel.

Arundel Sand & Gravel Co., Baltimore, Md.

## Gravel. (Roofing and Road)

American Ballast Co., Knoxville, Tenn.

## Gravity Spiral Chutes.

Mathews Gravity Carrier Co., Ellwood City, Pa.

## Grease.

Albany Lubricating Co., New York, N. Y.

## Grease Cups.

Albany Lubricating Co., New York, N. Y.

## Greases and Lubricating Compounds.

Albany Lubricating Co., New York, N. Y.  
Galena Signal Oil Co., Franklin, Pa.  
Robinson & Son Co., Wm. O., Baltimore, Md.

## Grinders. (Gypsum, Limestone, etc.)

Stedman's Foundry & Machine Wks., Aurora, Ind.

## Grinding Wheels.

Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.

## Groovers.

Hathor Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

## Gunpowder.

Atlas Powder Co., Wilmington, Del.  
Du Pont de Nemours Powder Co., E. I., Wilmington, Del.

## Hammers. (Steam, Power, Pneumatic.)

Jefferson Powder Co., Birmingham, Ala.  
Keystone National Powder Co., Emporium, Pa.

## Handle Machinery. [See Woodworking Machinery.]

## Hangers. [See Pulleys, Shafting and Hangers.]

## Hay Tools.

Myers & Bro., F. E., Ashland, .

## Heater. (Asphalt.)

Cummer & Son Co., F. D., The, Cleveland, Ohio.

## Heating Apparatus, Engineers and Contractors.

American Blower Co., Detroit, Mich.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

## Hoisting Machinery.

American Hoist & Derrick Co., St. Paul, Minn.  
Austin Machinery Co., W. E., Atlanta, Ga.  
Byers Machine Co., The John F., Ravenna, Ohio.  
Dake Engine Co., Grand Haven, Mich.  
Flory Mfg. Co., S., Bangor, Pa.  
Link-Belt Co., Nicetown, (Philadelphia), Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.  
Smith Co., T. L., Atlanta, Ga.  
Stroudsburg Engine Works, Stroudsburg, Pa.

## Hoists.

CHAIN.  
Spindel, J. G., Reading, Pa.

## ELECTRIC.

American Hoist & Derrick Co., St. Paul, Minn.  
Lidgerwood Mfg. Co., New York, N. Y.  
Monaghan Mch. Co., Chicago, Ill.  
National Hoisting Engine Co., Harrison, N. J.  
Patten Mfg. Co., Chattanooga, Tenn.

## GASOLINE.

Patten Mfg. Co., Chattanooga, Tenn.



## Industrial Track Work. [See Railways, Ind.]

### Injectors.

Jenkins Bros., New York, N. Y.  
Lankenheimer Co., The, Cincinnati, O.  
Sellers & Co., Inc., Wm., Philadelphia, Pa.

### Insulated Wires and Cables.

American Steel & Wire Co., Chicago, Ill.  
Safety Insulated Wire & Cable Co., New York, N. Y.

### Insulating Materials.

Continental Fibre Co., Newark, Del.  
General Electric Co., Schenectady, N. Y.  
John-Manville Co., H. W., New York, N. Y.

### Insulating. (Tape.)

Standard Paint Co., New York, N. Y.

### Insulating. (Varnishes and Compounds.)

Standard Paint Co., New York, N. Y.

### Iron.

La Belle Iron Works, Steubenville, O.  
Lebanon Valley Iron & Steel Co., Lebanon, Pa.  
Milton Mfg. Co., M. H., Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.  
Union Drawn Steel Co., Beaver Falls, Pa.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.

### Irrigation Machinery.

Cameron Steam Pump Wks., A. S. New York, N. Y.

### Investment Securities.

Breed, Elliott & Harrison, Cincinnati, O.  
Fidelity Savings Bank & Trust Co., Cincinnati, Ohio.

### Jobbers. (Electrical.)

Garroll Electrical Co., Washington, D. C.

### Kettles. (Steam Jacket.)

Badger & Sons Co., E. B., Boston, Mass.

### Key Seater. (Portable.)

Barr & Son, John T., Brooklyn, N. Y.

### Knitting Machinery.

Acme Knitting Mch. & Needle Co., Franklin, N. H.

### Lamps. (Arc and Incandescent.)

General Electric Co., Schenectady, N. Y.  
Goetting & Mathieson Co., New York, N. Y.  
Lee Electric Co., Baltimore, Md.  
Piedmont Electric Co., Asheville, N. C.  
Westinghouse Lamp Co., New York, N. Y.

### Lamps. (Carbon and Tungsten.)

Kewan Electric Lamp Co., Cincinnati, O.

### Lamp Posts. (Electric, Gas.)

Union Foundry Co., Anniston, Ala.  
Western Gas Construction Co., Ft. Wayne, Ind.  
Witners Fdry. & Mach. Works, Atlanta, Ga.

### Lamp Standards. (Ornamental Iron.)

Union Foundry Co., Anniston, Ala.  
Witners Foundry & Machine Works, Atlanta, Ga.

### Lands. (Mineral, Timber, Farm, etc.) [See Industrial, Agricultural and Commercial Opportunities.]

Landscape Architects (See Engineers.) [Landscape]

### Lath. (Expanded Metal.)

Aronson Co., L. Columbia, S. C.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.  
Milwaukee Corrugating Co., Milwaukee, Wis.

### Lathes. (Engine.)

Greaves, Klusman Tool Co., The, Cincinnati, O.

### Lawn Furniture. (Wire.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Dufur & Co., Baltimore, Md.

Dufur, Baggett & Co., Baltimore, Md.

### Leadite.

Leadite Co., Inc., The, Philadelphia, Pa.

### Light Plants.

Carlisle & Finch Co., The, Cincinnati, Ohio.

### Lights. (Portable Acetylene.)

Milburn Co., Alex. N., Baltimore, Md.

### Lime. (Hydrated.)

Kentucky Portland Cement & Coal Co., Louisville, Ky.

Security Cement & Lime Co., Hagerstown, Md.

### Limestone Products.

Kentucky Portland Cement & Coal Co., Louisville, Ky.

Security Cement & Lime Co., Hagerstown, Md.

### Liquor Filters.

International Filter Co., Chicago, Ill.

### Lithographers, Engravers.

Young & Selden Co., Baltimore, Md.

### Lockers. (Metal.)

Bernstein Mfg. Co., Phila., Pa.

Keighly Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.

### Locomotives.

INDUSTRIAL.

American Locomotive Co., New York, N. Y.

Baldwin Locomotive Wks., The, Philadelphia, Pa.

Climax Mfg. Co., Corry, Pa.

Card, Geo. B., Cincinnati, O.

Davenport Locomotive Works, Davenport, Ia.

Jeffrey Mfg. Co., Columbus, O.

Lima Locomotive Corporation, Lima, O.

Porter Co., H. K., Pittsburgh, Pa.

Southern Iron & Equipment Co., Altan, a, Ga.

### RAILWAY.

American Locomotive Co., New York, N. Y.

Baldwin Locomotive Wks., The, Philadelphia, Pa.

Lima Locomotive Corporation, Lima, O.

Porter Co., H. K., Pittsburgh, Pa.

### Log Dumping Device.

Chase Turbine Mfg. Co., Orange, Mass.

### Looms and Weaving Machinery.

Draper Co., Hopedale, Mass.

Rason Machine Works, Taunton, Mass.

Saco-Lowell Shops, Boston, Mass.

### Loom Harness.

American Supply Co., Providence, R. I.

### Lubricants.

Albany Lubricating Co., New York, N. Y.

Old Elevator Co., New York, N. Y.

### Lubricants. (Graphite.)

Dixon Crucible Co., Joseph, Jersey City, N. J.

### Lumber.

Industrial Lumber Co., Elizabeth, La.

Lumber. (Crescent.)

American Crescent Works, New Orleans, La.

Lumber. (Heavy Construction, Pitch Pine, etc.)

Industrial Lumber Co., Elizabeth, La.

National Lumber & Crescent Co., Texarkana, Ark.

### Lumber Buggies.

Soule Steam Feed Works - Meridian, Miss.

### Lumber Stackers.

Soule Steam Feed Works, Meridian, Miss.

## Machinery. (Special.)

Bliss Co., E. W., Brooklyn, N. Y.

Kline, Lewis T., Alpena, Mich.

Universal Machine Co., Baltimore, Md.

## Machinery and Supplies. (New and Second-Hand Bargains.)

Assots Purchasing Co., Wheeling, W. Va.

Casey Machinery Co., D. L., Springfield, O.

Champion Fibre Co., Canton, N. C.

Cleveland Belting & Machinery Co., Cleveland, O.

Consolidated Iron & Metal Co., Chattanooga, Tenn.

Contractors' Service Co., New York, N. Y.

Duzets & Son, New York, N. Y.

Harris Bros. Co., Chicago, Ill.

Hitter's Sons Co., Henry A., Philadelphia, Pa.

Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.

Lehman, Charles T., Birmingham, Ala.

Lodge & Shipley Mach. Tool Co., Cincinnati, O.

Marine Metal Supply Co., New York, N. Y.

Nuesbaum & Co., V. M., Fort Wayne, Ind.

Pfannmueller Engineering Co., Chicago, Ill.

Pipe & Contractors' Supply Co., New York, N. Y.

Power Equipment Co., New York, N. Y.

Prentiss Tool & Supply Co., New York, N. Y.

Randall Machinery Co., Cincinnati, O.

Read Co., Howard W., Philadelphia, Pa.

Sachsenmaier & Co., George, Philadelphia, Pa.

Samuel, Frank, Philadelphia, Pa.

Seyfert's Sons, Inc., L. E., Philadelphia, Pa.

South Side Fdry. & Mch. Co., Charleston, W. Va.

Southern Mch. & Equipment Co., Lynchburg, Va.

Stamping Machinery Co., New York, N. Y.

Tampa Machinery Exchange, Tampa, Fla.

Texas Supply Co., Beaumont, Tex.

Thomsonville Iron Works, Thomsonville, Ga.

Tomney, Frank, Inc., Philadelphia, Pa.

Wayne Machinery Co., Fort Wayne, Ind.

Wilson Machy. Co., Harold, R., St. Louis, Mo.

Winterer Co., Herman L., Philadelphia, Pa.

## Machine Tools.

Greaves, Klusman Tool Co., The, Cincinnati, O.

## Machinists. (Engineers.)

Savannah Iron Works, Savannah, Ga.

Universal Machine Co., Baltimore, Md.

## Magnesite Materials.

John-Manville Co., H. W., New York, N. Y.

## Magnetic Separators.

Paxon Co., J. W., Philadelphia, Pa.

## Mail Chutes.

Cutler Mail Chute Co., Rochester, N. Y.

## Mantels. (Tile.)

Northcross Mantel Co., W. J., Memphis, Tenn.

## Mantels. (Wooden.)

Northcross Mantel Co., W. J., Memphis, Tenn.

## Mechanical Draft.

Buffalo Forge Co., Buffalo, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

## Metal Ceilings. [See Ceilings, Metal.]

## Metaline.

Metaline Co., Long Island City, N. Y.

## Metal. (For Tanks, Culverts, Roofing, etc.)

Portsmouth Steel Co., Portsmouth, O.

## Metal Corner Bead.

Penn Metal Co., Boston, Mass.

## Metal Culverts. [See Culverts.] (Corrugated Metal.)

## Metal Shingles. [See Shingles.] (Metal.)

## Metal Stamping.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

## Metal Window Frames and Sash. [See Window Frames and Sash.] (Fireproof.)

## Metal Work. [See Sheet Metal Work.]

## Metal-Working Machinery. (Sheet.)

Bertsch & Co., Cambridge City, Ind.

Bliss Co., E. W., Brooklyn, N. Y.

Price Machinery Co., S. M., Norfolk, Va.

## Meters. (Water.)

Alberger Pump & Condenser Co., New York, N. Y.

## Meter Boxes, Couplings, Gauges. (Water.)

Clark Co., H. W., Mattoon, Ill.

## Micrometers, Calipers, etc.

Starrett Co., L. S., Athol, Mass.

## Milk Filters. (Liquor, Milk, etc.)

International Filter Co., Chicago, Ill.

## Mill Engineers and Architects.

O'Brian, W. C., Memphis, Tenn.

Sirrine, J. E., Greenville, S. C.

## Mill Supplies.

Balley-Lebby Co., Charleston, S. C.

Cameron & Barkley Co., Charleston, S. C.

Gainesville Iron Works, Gainesville, Ga.

Lombard Iron Works, Augusta, Ga.

Lunkenheimer Co., The, Cincinnati, O.

Mecklenburg Iron Works, Charlotte, N. C.

Nordyke & Marmion Co., Indianapolis, Ind.

Salem Foundry & Machine Wks., Salem, Va.

Starr Co., B. F., Baltimore, Md.

Wolf Co., Chambersburg, Md.

## Mining Machinery. (Gold, Copper, Plate, etc.)

Bartlett & Snow Co., C. O., Cleveland, O.

Jeffrey Mfg. Co., Columbus, O.

McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Mecklenburg Iron Works, Charlotte, N. C.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

## Mixers. (Concrete.)

Atlas Engineering Co., Milwaukee, Wis.

Austin Machinery Co., W. E., Atlanta, Ga.

Blayton Mfg. Co., Cambridge Springs, Pa.

Smith Co., T. L., Atlanta, Ga.

Standard Scale & Supply Co., Pittsburgh, Pa.

Van Duzen, Royce Co., Columbus, O.

## Mixer Machinery.

Smith Co., T. L., Atlanta, Ga.

## Mixing Machinery.

Dunning, W. D., Syracuse, N. Y.

Lynn-Superior Co., The, Cincinnati, O.

## Mortar Colors.

Chattanooga Paint Co., Chattanooga, Tenn.

## Motor Trucks. (Electric.)

General Vehicle Co., Long Island City, N. Y.

## Motor Trucks. (Gasoline.)

White Co., The, Cleveland, O.

## Motor Trucks. (Second Hand.)

Mar-Del Mobile Co., Baltimore, Md.

## Music Wire.

Waterbury Co., The, New York, N. Y.

## Nails. (Cut.)

La Belle Iron Works, Steubenville, O.

## Nails and Spikes.

La Belle Iron Works, Steubenville, Ohio.

Lebanon Valley Iron & Steel Co., Lebanon, Pa.

Republic Iron & Steel Co., Youngstown, O.

Youngstown Sheet & Tube Co., Youngstown, O.

## Nuts. [See Bolts, Nuts, Rivets, etc.]

## Oil. (Crescent.)

Barrett Mfg. Co., Philadelphia, Pa.

## Oils. (Lubricating, Etc.)

Albany Lubricating Co., New York, N. Y.

Galena Signal Oil Co., Franklin, Pa.

Gulf Refining Co., Pittsburgh, Pa.

Robinson & Son Co., Wm. C., Baltimore, Md.

## Oil Cans.

Wall Mfg. Supply Co., P., Allegheny, Pa.

## Oil Engines. [See Engines (Oil).]

## Oil Separators.

Stewart Heater Co., Buffalo, N. Y.

## Oil Well Machinery.

Keystone Steam Well Mach. Co., Beaver Falls, Pa.

Williams Bros., Itasca, N. Y.

## Oil Well Tubing and Casing.

Ryers Co., A. M., Pittsburgh, Pa.

## Ore Handling Machinery. [See Coal Handling Machinery.]

## Ornamental Iron Works.



- Presses. (Stamping.)**  
Bliss Co., E. W., Brooklyn, N. Y.
- Printers. (Book, Catalog, Job, etc.)**  
Fleet-McGinley Co., Baltimore, Md.
- Promoters.**  
Electric Bond & Share Co., New York, N. Y.
- Pulleys. (Friction Clutch.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescent-Morris Co., Philadelphia, Pa.  
Edgemont Machine Co., Dayton, O.  
Medart Patent Pulley Co., St. Louis, Mo.  
Foote Engineering & Mach. Co., Baltimore, Md.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Pulleys. (Steel Rim.)**  
Medart Patent Pulley Co., St. Louis, Mo.
- Pulleys. (Wood Split.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Lane Mfg. Co., Montpelier, Vt.  
Medart Patent Pulley Co., St. Louis, Mo.  
Reeves Pulley Co., Columbus, Ind.  
Saginaw Mfg. Co., Saginaw, Mich.  
Salem Foundry & Machine Wks., Salem, Va.
- Pulleys, Shafting and Hangers.**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescent-Morris Co., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Golden's Foundry & Mach. Co., Columbus, Ga.  
Jeffrey Mfg. Co., Columbus, O.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Link-Belt Co., Nictown (Philadelphia), Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Nortyke & Marston Co., Indianapolis, Ind.  
Foote Engineering & Mach. Co., Baltimore, Md.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Pulverizers.**  
Aising Engineering Co., J. R., New York, N. Y.  
Austin Mfg. Co., Chicago, Ill.  
Gründler Pat. Crusher & Pulv. Co., St. Louis, Missouri.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Raymond Bros., Impact Pulv. Co., Chicago, Ill.  
Stedman's Foundry & Machine Wks., Aurora, Ind.  
Western Wheel Scraper Co., Aurora, Ill.
- Pumping Machinery.**  
Affiliated Manufacturers Co., Milwaukee, Wis.  
Alberger Pump & Condenser Co., New York, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cook Well Co., The, St. Louis, Mo.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Deane Steam Pump Co., Holyoke, Mass.  
Erie Pump & Engine Works, Erie, Pa.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Morris Machine Works, Baldwinville, N. Y.  
Myers & Bros., F. E., Ashland, O.  
Norborn Engineering Co., Philadelphia, Pa.  
Reilly Mfg. Co., J. J., Louisville, Ky.  
Snyder Pump & Well Co., Inc., Richmond, Va.  
Union Steam Pump Co., Battle Creek, Mich.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Air.)**  
Blakeslee Mfg. Co., Du Quoin, Ill.
- Pumps. (Boiler Feed.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Jeanneville Iron Works Co., Hazleton, Pa.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Myers & Bros., F. E., Ashland, O.  
Reilly Mfg. Co., J. J., Louisville, Ky.  
Union Steam Pump Co., Battle Creek, Mich.
- Pumps. (Centrifugal.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
De Laval Steam Turbine Co., Trenton, N. J.  
Erie Pump & Engine Works, Erie, Pa.  
Jeanneville Iron Works Co., Hazleton, Pa.  
Morris Machine Works, Baldwinville, N. Y.  
Norborn Engineering Co., Philadelphia, Pa.  
Pacific Flush Tank Co., New York, N. Y.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Deep Well.)**  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
- Pumps. (Dredging.)**  
Layne & Bowler Co., Houston, Tex.
- Pumps. (Steam.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Blake & Knowles Steam Pump Works, East Cambridge, Mass.  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Clayton Air Compressor Works, Cambridge, Mass.  
Cook Well Co., The, St. Louis, Mo.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Deane Steam Pump Co., Holyoke, Mass.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Murray Iron Works Co., Burlington, Ia.  
Price Machinery Co., S. M., Norfolk, Va.  
Snow Steam Pump Works, The, New York, N. Y.  
Snyder Pump & Well Co., Inc., Richmond, Va.  
Union Steam Pump Co., Battle Creek, Mich.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Trench.)**  
Affiliated Manufacturers Co., Milwaukee, Wis.
- Pumps. (Turbine Driven.)**  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Pumps. (Vacuum.)**  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Reilly Mfg. Co., J. J., Louisville, Ky.  
Smith Co., T. L., Atlanta, Ga.  
Union Steam Pump Co., Battle Creek, Mich.
- Pumps. (Water works.)**  
Goulds Mfg. Co., Seneca Falls, N. Y.
- Punches and Dies.**  
American Die & Tool Co., Reading, Pa.
- Punching and Shearing Machinery.**  
Bertsch & Co., Cambridge City, Ind.  
Bliss Co., E. W., Brooklyn, N. Y.
- Railroads. [See Industrial, Agricultural and Commercial Opportunities.]**
- Railroad Equipment and Supplies. (New and Second-hand.)**  
American Frog & Switch Co., Hamilton, O.  
American Locomotive Co., New York, N. Y.  
Bailey-Lobby Co., The, Charleston, S. C.  
Birmingham Rail & Loco. Co., Birmingham, Ala.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Card. Geo. R. Co., The, New York, N. Y.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Foster Co., L. B., Pittsburgh, Pa.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Grimeshaw, Wm. B., Philadelphia, Pa.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Hyde, Chas., Pittsburgh, Pa.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Macleary, J. H., Suffolk, Va.  
National Steel Rail Co., St. Louis, Mo.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Read Co., Howard W., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Sterling Machinery Co., New York, N. Y.  
United States Rail Co., Cumberland, Md.  
Weir Frog Co., Cincinnati, O.  
Wilson & Co., E. H., Philadelphia, Pa.  
Wilson Mach. Co., Harold R., St. Louis, Mo.
- Railroad Frogs & Switches.**  
American Frog & Switch Co., Hamilton, O.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Conley Frog & Switch Co., Memphis, Tenn.  
Easton Car & Construction Co., Easton, Pa.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Newhall Engineering Co., Geo. M., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Sweet's Steel Co., Williamsport, Pa.  
Weir Frog Co., Cincinnati, O.
- Rails. (Steel.)**  
Carnegie Steel Co., Pittsburgh, Pa.  
Foster Co., L. B., Pittsburgh, Pa.  
Franklin, J. E., Atlanta, Ga.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.  
Hyde, Chas., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Lewis & Co., Henry, Philadelphia, Pa.  
Macleary, J. H., Suffolk, Va.  
National Steel Rail Co., St. Louis, Mo.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Sweet's Steel Co., Williamsport, Pa.  
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.  
United States Rail Co., Cumberland, Md.  
Wilson & Co., E. H., Philadelphia, Pa.
- Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]**
- Railings and Grilles. (Brass.)**  
Newman Mfg. Co., Cincinnati, O.
- Railways. (Industrial.)**  
Chase Fdry. & Mfg. Co., Columbus, O.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Easton Car & Construction Co., Easton, Pa.  
Hunt Co., Inc., G. W., West New Brighton, N. Y.  
Link-Belt Co., Nictown (Philadelphia), Pa.
- Rams. (Hydraulic.) [See Hydraulic Ram.]**
- Reamers.**  
American Die & Tool Co., Reading, Pa.  
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Reeds.**  
American Supply Co., Providence, R. I.
- Refrigerating Machinery and Apparatus.**  
Huetteman & Cramer Co., The, Detroit, Mich.  
Remington Machine Co., Wilmington, Del.  
Vilter Mfg. Co., Milwaukee, Wis.  
Vogt Machine Co., Henry, Louisville, Ky.  
York Mfg. Co., York, Pa.
- Reinforcing Bars. [See Concrete Reinforcing Bars.]**
- Riveters. (Pneumatic.)**  
Independent Pneumatic Tool Co., Chicago, Ill.
- Road Machinery.**  
Austin Bros., Atlanta, Ga.  
Austin-Western Road Mch. Co., The, Chicago, Ill.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Erie Machine Shops, Erie, Pa.  
Farquhar Co., Ltd., A. B., York, Pa.  
Gallion Iron Works & Mfg. Co., The, Gallion, Ohio.  
Holt Manufacturing Co., The, Florida, Ill.  
Huber Mfg. Co., The, Marion, Ohio.  
Kelly Springfield Road Roller Co., Springfield, O.  
Russell Grader Mfg. Co., Minneapolis, Minn.  
Syracuse Chilled Iron Co., Syracuse, N. Y.  
Universal Road Mch. Co., Kingston, N. Y.  
Western Wheel Scraper Co., Aurora, Ill.  
Wheeling Mold & Fdry. Co., Wheeling, W. Va.
- Roadmaking Materials.**  
Austin Bros., Atlanta, Ga.  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Barrett Mfg. Co., Philadelphia, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Roller. (Steam.)**  
Austin-Western Road Mch. Co., The, Chicago, Ill.  
Barber Asphalt Paving Co., The, Buffalo, N. Y.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Erie Machine Shops, Erie, Pa.  
Huber Mfg. Co., The, Marion, Ohio.  
Kelly Springfield Road Roller Co., Springfield, O.  
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**  
Gulf Refining Co., Pittsburg, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Preservatives.**  
Barrett Mfg. Co., Philadelphia, Pa.  
Finley, Sam. E., Atlanta, Ga.  
Gulf Refining Co., Pittsburg, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Scarifiers.**  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Gallion Iron Works & Mfg. Co., The, Gallion, Ohio.  
Huber Mfg. Co., The, Marion, Ohio.
- Rollers. (Bending and Straightening.)**  
Bertsch & Co., Cambridge City, Ind.
- Roller Covering Supplies.**  
American Supply Co., Providence, R. I.
- Roofing Caps.**  
Robertson Steel & Iron Co., W. F., Cincinnati, O.
- Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Asbestos Protected Metal Co., Beaver Falls, Pa.  
Asphalt Ready Roofing Co., New York, N. Y.  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Barrett Mfg. Co., Philadelphia, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.  
Johns-Manville Co., H. W., New York, N. Y.  
Standard Paint Co., The, New York, N. Y.
- Roofing. (Metal Shingles.) [See Shingles, Metal.]**  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Roofing. (Slate.)**  
East Bangor Consul, Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Johnson, E. J., New York, N. Y.
- Roofing and Siding. (Metal.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Asbestos Protected Metal Co., Beaver Falls, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.  
Milwaukee Corrugating Co., Milwaukee, Wis.  
New Orleans Roofing & Metal Wks., New Orleans, La.
- Rope. (Manila, Sisal, Hemp, etc.)**  
American Mfg. Co., Brooklyn, N. Y.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
Intern'l Cotton Mills, New York, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
St. Louis Cordage Co., St. Louis, Mo.  
Waterbury Co., New York, N. Y.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope. (Wire.)**  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Hunt Co., Inc., G. W., West New Brighton, N. Y.  
Waterbury Co., New York, N. Y.
- Rope Drives.**  
Caldwell & Son, H. W., Chicago, Ill.  
Crescent-Morris Co., Philadelphia, Pa.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Waterbury Co., New York, N. Y.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rubber Goods.**  
Electric Hose & Rubber Co., Wilmington, Del.  
Eureka Fire Hose Mfg. Co., New York, N. Y.  
Goodyear Tire & Rubber Co., Akron, Ohio.
- Rules. (Steel.)**  
Lufkin Rule Co., Saginaw, Mich.  
Starrett Co., L. S., Athol, Mass.
- Safes and Vaults.**  
York Safe & Lock Co., York, Pa.
- Sand.**  
Arundel Sand & Gravel Co., Baltimore, Md.  
Balfour Quarry Co., Asheville, N. C.  
Hime Sand Co., J. R., Atlanta, Ga.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
- Sand. (Foundry.)**  
Newport Sand Bank Co., Inc., Newport, Ky.
- Sand and Gravel Plant Equipment.**  
Austin Machinery Co., W. E., Atlanta, Ga.
- Sap Stain Preventive.**  
Church & Dwight Co., New York, N. Y.  
Mathieson Alkali Works, Saltville, Va.
- Sash Chain.**  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**  
Gerlich Co., Peter, Cleveland, O.  
Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.  
Smith Machine Co., H. B., Smithville, N. J.  
Snyder Pump & Well Co., Inc., Richmond, Va.
- Saws. (Band.)**  
Smith Machine Co., H. B., Smithville, N. J.
- Saws. (Hack.)**  
Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**  
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**  
Gainesville Iron Works, Gainesville, Ga.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Knight Mfg. Co., Canton, O.  
Lane Mfg. Co., Montpelier, Vt.
- Sawmill Machinery.**  
Bailey-Lobby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Chase Turbine Mfg. Co., Orange, Mass.  
Knight Mfg. Co., Canton, O.  
Lane Mfg. Co., Montpelier, Vt.  
Mecklenburg Iron Works, Charlotte, N. C.  
Price Mch. Co., S. M., Norfolk, Va.  
Schofield Iron Works, Macon, Ga.  
Southern Engine & Boiler Wks., Jackson, Tenn.  
Snyder Pump & Well Co., Inc., Richmond, Va.
- Saw Sharpeners.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files. (Cotton Gin.)**  
Carver Cotton Gin Co., East Bridgewater, Mass.
- Scales.**  
Standard Scale & Supply Co., Pittsburgh, Pa.
- Scales. (Weighing and Counting.)**  
National Scale Co., Chicago, Ill.
- Screens. (Fly, Window and Door.)**  
Cincinnati Mfg. Co., Cincinnati, O.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens. (Mining, Stone, etc.)**  
Converse Co., Inc., F. S., Lestershire, N. Y.  
Hick Performance Co., Rochester, N. Y.  
Heudrick Mfg. Co., Carbondale, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Mundt & Sons, Charles, Jersey City, N. J.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screenings. (For Concrete and Road Construction.)**  
American Ballast Co., Knoxville, Tenn.
- Screws. (Machine.)**  
Progressive Mfg. Co., Torrington, Conn.
- Screws. (Safety Set.)**  
Allen Manufacturing Co., Inc., Hartford, Conn.
- Searchlights.**  
Carlisle & Finch Co., The, Cincinnati, Ohio.  
Ft. Wayne Electric Works, Ft. Wayne, Ind.
- Separators. (Dust.)**  
Buffalo Forge Co., Buffalo, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Separators. (Steam.)**  
Grieson-Russell Co., New York, N. Y.
- Sewer Flushing Siphons.**  
Merritt Hydraulics Co., Philadelphia, Pa.  
Pacific Flush Tank Co., New York, N. Y.
- Sewer Joint Compounds.**  
Pacific Flush Tank Co., New York, N. Y.
- Sewer Pipe. (Vitrified.)**  
Bannon Pipe Co., F., Louisville, Ky.  
Bibb Sewer Pipe Co., Macon, Ga.  
Blackmer & Post Pipe Co., St. Louis, Mo.  
Cannelton Sewer Pipe Co., Cannelton, Ind.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Southern Sewer Pipe Co., Birmingham, Ala.  
Stevens Sons Co., H., Macon, Ga.
- Sewer Pipe and Drains. (Monolithic Concrete)**  
Requarth Co., C. W., Charlotte, N. C.
- Sewage Pumping and Disposal Apparatus.**  
Merritt Hydraulics Co., Philadelphia, Pa.  
Pacific Flush Tank Co., New York, N. Y.
- Shafts. (Automobile)**  
American Die & Tool Co., Reading, Pa.
- Shafting. (Polished Steel.)**  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Republic Iron & Steel Co., Youngstown, O.  
Union Drawn Steel Co., Beaver Falls, Pa.
- Shafting. [See Pulleys, Shafting and Hangers.]**
- Sharpening Stones.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitified Wheel Co., Westfield, Mass.
- Shears. (Metal.)**  
Bertsch & Co., Cambridge City, Ind.
- Sheet Brass and Copper.**  
Hussey & Co., C. G., Pittsburgh, Pa.  
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Sheet Metal Work.**  
Atlas Metal Works, Dallas, Tex.  
Birmingham Metal Products Co., Birmingham, Ala.  
Dexter Metal Works, Hagerstown, Md.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Lone Star Culvert Co., Houston, Tex.  
McMillan Bros., Jacksonville, Fla.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
- Sheet Metal Works, Dallas, Tex.**  
Birmingham Metal Products Co., Birmingham, Ala.
- Sheet Metal Works, Hagerstown, Md.**  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Lone Star Culvert Co., Houston, Tex.  
McMillan Bros., Jacksonville, Fla.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
- Sheet Metal Works, Jacksonville, Fla.**  
McMillan Bros., Jacksonville, Fla.
- Sheet Metal Works, Milwaukee, Wis.**  
Milwaukee Corrugating Co., Milwaukee, Wis.  
Sallebury Metal Culvert Co., Salisbury, N. C.  
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Virginia Metal & Culvert Co., Roanoke, Va.  
Voigtman & Co., Chicago, Ill.
- Sheet Metal Working Machinery.**  
Bertsch & Co., Cambridge City, Ind.  
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
La Belle Iron Works, Steubenville, O.  
Potomac Sheet Steel Co., Portsmouth, O.  
Republic Iron & Steel Co., Youngstown, O.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.  
Wood Iron & Steel Co., Ala., Philadelphia, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Shingles. (Metal.)**  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
- Shovels. (Special for Any Purpose.)**  
Conneaut Shovel Co., The, Conneaut, Ohio.
- Shovels. (Steel, Brass, Aluminum, etc.)**  
Conneaut Shovel Co., The, Conneaut, Ohio.  
Fanner Mfg. Co., The, Cleveland, Ohio.
- Shutters. (Iron.)**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.
- Shutters. (Steel Rolling.)**  
Kinross Mfg. Co., Columbus, O.
- Shutters. (Tin Clad.)**  
Victor Mfg. Co., Newburyport, Mass.
- Silos. (Metal.)**  
Dixie Culvert & Metal Co., Atlanta, Ga.
- Skylights and Cornices.**  
Danzon Metal Works, Hagerstown, Md.  
Emporia Cornice & Skylight Works, North Emporia, Va.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
- Slate. (Roofing, Sanitary, Structural, etc.)**  
East Bangor Consul, Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Johnson, E. J., New York, N. Y.
- Sluice Gates and Appliances.**  
Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks. (Iron and Steel.)**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Keeler Co., E., Williamsport, Pa.  
Lombard Iron Works, Augusta, Ga.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schofield Iron Works, Macon, Ga.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Soda. (Bicarbonate.)**  
Church & Dwight Co., New York, N. Y.  
Mathieson Alkali Works, Saltville, Va.
- Speed Reducing Transmissions.**  
James Mfg. Co., D. O., Chicago, Ill.
- Spikes. (Railroad.)**  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
- Spikes. [See Nails and Spikes.]**
- Springs. (Machinery, Railway, Spiral.)**  
Cary Spring Works, New York, N. Y.  
Raymond Mfg. Co., Ltd., Corry, Pa.
- Sprinkler Systems. (Automatic.)**  
Globe Automatic Sprinkler Co., Cincinnati, O.
- Stamp Mills.**  
Mecklenburg Iron Works, Charlotte, N. C.
- Stamps. (Brass, Rubber.)**  
Baltimore Office Supply Co., Baltimore, Md.
- Standpipes.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Struthers-Wells Co., Warren, Pa.
- Stapling Machinery. (Fruit Package, Basket, etc.)**  
Saranac Machine Co., Benton Harbor, Mich.
- Stationers. (Envelope, Letter and Bill Head, etc.)**  
Young & Seiden Co., Baltimore, Md.
- Steam Feeds.**  
Soule Steam Feed Works, Meridian, Miss.
- Steam Fitters' Supplies.**  
Oster Mfg. Co., The, Cleveland, Ohio.  
Saunders' Sons, D. Inc., Yonkers, N. Y.
- Steam Heating.**  
Keeler Co., E., Williamsport, Pa.
- Steamship Lines. (Coastwise.)**  
Baltimore Steam Packet Co., Baltimore, Md.  
Chesapeake Steamship Co., Baltimore, Md.  
Detroit & Cleveland Navigation Co., Detroit, Mich.  
Merchants & Miners' Trans. Co., Baltimore, Md.



**Steamship Lines.** (Trans Atlantic.)  
 Cunard Steamship Co., Ltd., New York, N. Y.

**Steam Shovel Chains.**  
 Weimer Chain & Iron Co., Lebanon, Pa.

**Steam Shovels.**  
 American Clay Machinery Co., The Bucyrus, Ohio.  
 Fairbanks Steam Shovel Co., Marion, O.  
 Marion-Osgood Co., Marion, O.  
 Marion Steam Shovel Co., Marion, O.  
 Sherwood, E. C., New York, N. Y.

**Steam Specialties.**  
 Lunkensheimer Co., The Cincinnati, Ohio.  
 Powell Co., Wm., Cincinnati, O.

**Steam Traps.**  
 Jenkins Bros., New York, N. Y.

**Steel.**  
 Carnegie Steel Co., Pittsburgh, Pa.  
 District Bros., Baltimore, Md.  
 Gulf States Steel Co., Birmingham, Ala.  
 Hoffman & Co., Inc., R. C., Baltimore, Md.  
 Jones & Laughlin Steel Co., Pittsburgh, Pa.  
 La Belle Iron Works, Steubenville, O.  
 Lackawanna Steel Co., Lackawanna, N. Y.  
 Lebanon Valley Iron & Steel Co., Lebanon, Pa.  
 Portsmouth Steel Co., Portsmouth, Ohio.  
 Republic Iron & Steel Co., Youngstown, O.  
 Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.  
 Union Drawn Steel Co., Beaver Falls, Pa.  
 Upson Nut Co., The Cleveland, O.  
 Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
 Youngstown Sheet & Tube Co., The Youngstown, O.

**Steel (Tool).**  
 Bourne-Fuller Co., The Cleveland, Ohio.  
 McKenna Bros., Brass Co., Pittsburgh, Pa.  
 Union Drawn Steel Co., Beaver Falls, Pa.

**Steel (Vanadium.)**  
 Carnegie Steel Co., Pittsburgh, Pa.  
 Union Drawn Steel Co., Beaver Falls, Pa.

**Steel Buildings.** (Designers, Builders.)  
 Amer. Bridge Co., of New York, N. Y.  
 Belmont Iron Works, Philadelphia, Pa.  
 Champion Bridge Co., Wilmington, O.  
 Chesapeake Iron Works, Baltimore, Md.  
 Des Moines Bridge & Iron Co., Des Moines, Ia.  
 Phoenix Iron Co., Philadelphia, Pa.  
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
 Richmond Structural Steel Co., Richmond, Va.  
 Schreiber & Sons Co., The L., Cincinnati, O.  
 Sneed Architectural Iron Wks., Louisville, Ky.  
 Turner, C. A. F., Minneapolis, Minn.  
 Virginia Bridge & Iron Co., Roanoke, Va.

**Steel Castings.**  
 Gracible Steel Castings Co., Lansdowne, Pa.  
 Hoffman & Co., Inc., R. C., Baltimore, Md.  
 Riverside Steel Casting Co., Newark, N. J.

**Steel Plate Work.**  
 Casey-Hedges Co., Chattanooga, Tenn.  
 Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.  
 Coatesville Boiler Works, Coatesville, Pa.  
 Hoffman & Co., Inc., R. C., Baltimore, Md.  
 Memphis Steel Construction Co., Memphis, Tenn.  
 Phoenix Iron Co., Philadelphia, Pa.  
 Struthers-Wells Co., Warren, Pa.

**Steel Protector.** (Concrete Carb. Steps, etc.)  
 (See Carb Protector Steel.)

**Steel Sheet Piling.**  
 Franks, J. E., Atlas, Ga.  
 Jones & Laughlin Steel Co., Pittsburgh, Pa.  
 Lackawanna Steel Co., Lackawanna, N. Y.

**Stencils.**  
 Baltimore Office Supply Co., Baltimore, Md.

**Stills.** (Turpentine.)  
 McMillan Bros., Jacksonville, Fla.

**Stirrup.** (Building.)  
 Chesapeake Iron Works, Baltimore, Md.

**Stock Certificates, Bonds and Seals.**  
 Baltimore Office Supply Co., Baltimore, Md.

**Stokers.** (Hand.)  
 Ruber Grate Bar & Stoking Co., Baltimore, Md.

**Stokers.** (Mechanical.)  
 Babcock & Wilcox Co., New York, N. Y.  
 Westinghouse Machine Co., Pittsburgh, Pa.

**Stone.** (Building.)  
 Bedford Steam Stone Works, Bedford Ind.  
 Kirkpatrick Sand & Cement Co., Birmingham, Ala.

**Storage Batteries.**  
 Eec. Storage Battery Co., The Philadelphia, Pa.  
 Westinghouse Machine Co., Pittsburgh, Pa.

**Storage Warehouses.**  
 Union Terminal Co., Jacksonville, Fla.

**Structural Steel and Iron.**  
 Amer. Bridge Co. of New York, N. Y.  
 Belmont Iron Works, Philadelphia, Pa.  
 Bourne-Fuller Co., The Cleveland, Ohio.  
 Carnegie Steel Co., Pittsburgh, Pa.  
 Champion Bridge Co., Wilmington, O.  
 Chesapeake Iron Works, Baltimore, Md.  
 Chickasaw Iron Works, Memphis, Tenn.  
 Chicago Bridge & Iron Works, Chicago, Ill.  
 Cincinnati Iron & Steel Co., Cincinnati, O.  
 Des Moines Bridge & Iron Co., Des Moines, Ia.  
 Dietrich Bros., Baltimore, Md.  
 East St. Louis Bridge Co., East St. Louis, Ill.  
 Easton Car & Construction Co., Easton, Pa.  
 Greason's Sons Iron & Steel Co., Jos., St. Louis, Mo.  
 Hoffman & Co., Inc., R. C., Baltimore, Md.  
 Jones & Laughlin Steel Co., Pittsburgh, Pa.  
 Lackawanna Steel Co., Lackawanna, N. Y.  
 Oregonia Bridge Co., Lebanon, Ohio.  
 Memphis Steel Construction Co., Memphis, Tenn.  
 Phoenix Iron Co., Philadelphia, Pa.  
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
 Republic Iron & Steel Co., Youngstown, O.  
 Richmond Structural Steel Co., Richmond, Va.  
 Scaife & Sons Co., Wm. B., Pittsburgh, Pa.  
 Schreiber & Sons Co., The L., Cincinnati, O.  
 Sneed Architectural Iron Works, Louisville, Ky.  
 Southern Sheet & Tin Plate Co., Ashland, Ky.  
 Savannah Steel Products Co., Savannah, Ga.  
 Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.  
 Vincennes Bridge Co., Vincennes, Ind.  
 Virginia Bridge & Iron Co., Roanoke, Va.  
 Withers Fdry. & Mach. Wks., Atlanta, Ga.

**Stump Pullers.**  
 Zimmerman Steel Co., Lone Tree, Iowa.

**Sulphur.**  
 Union Sulphur Co., New York, N. Y.

**Super-Heaters.** (Steam.)  
 Babcock & Wilcox Co., New York, N. Y.  
 Power Specialty Co., New York, N. Y.

**Surveying Instruments.**  
 Weber & Co., F., Philadelphia, Pa.

**Swinging Engines.**  
 Lake Engine Co., Grand Haven, Mich.

**Switchboards, Switches, etc.**  
 Fort Wayne Electric Works, Fort Wayne, Ind.  
 General Electric Co., Schenectady, N. Y.

**Switches.** [See Railroad Frogs and Switches.]

**Switchstands.**  
 Vair Frog Co., Cincinnati, O.

**Tackle Blocks.** (For Wire or Manila Rope.)  
 Broderick & Bascom Rope Co., St. Louis, Mo.

**Talc and Soapstone Powders.**  
 Georgia Talc Co., Ashville, N. O.

**Tanks.** (Iron and Steel.)  
 American Bridge Co., New York, N. Y.  
 American Water Softener Co., Philadelphia, Pa.

Caldwell Co., Inc., W. E., Louisville, Ky.  
 Casey-Hedges Co., Chattanooga, Tenn.  
 Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.  
 Chicago Bridge & Iron Works, Chicago, Ill.  
 Coatesville Boiler Works, Coatesville, Pa.  
 Cole Mfg. Co., R. D., Newnan, Ga.  
 Des Moines Bridge & Iron Co., Des Moines, Ia.  
 Dixie Culvert & Metal Co., Atlanta, Ga.  
 Harry Bros. Co., Newport, Ky.  
 Hartley Boiler Works, Montgomery, Ala.  
 Meeker Co., E., Williamsport, Pa.  
 Keystone Boiler & Foundry Co., Columbia, Pa.  
 Lombard Iron Works, Augusta, Ga.  
 Lookout Boiler & Mfg. Co., Chattanooga, Tenn.  
 Memphis Steel Construction Co., Memphis, Tenn.  
 New Orleans Roofing & Metal Wks., New Orleans, La.  
 New York Central Iron Wks. Co., Hagerstown, Md.  
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
 Schofield Iron Works, Macon, Ga.  
 Struthers-Wells Co., Warren, Pa.  
 Snyder Pump & Well Co., Inc., Richmond, Va.  
 Tennessee Metal Culvert Co., Nashville, Tenn.  
 Twin City Boiler Works, Bristol, Va.-Tenn.  
 Virginia Bridge & Iron Co., Roanoke, Va.  
 Walsh & Weidner Boiler Co., Chattanooga, Tenn.

**Tanks.** (Wood.)  
 Caldwell Co., Inc., W. E., Louisville, Ky.  
 Davis & Son, G. M., Palatka, Fla.  
 Snyder Pump & Well Co., Inc., Richmond, Va.

**Tanks.** (For Tank Cars, Second-Hand.)  
 Universal Iron & Supply Co., St. Louis, Mo.

**Tapes.** (Measuring.)  
 Luffin Rule Co., Saginaw, Mich.  
 Starrett Co., L. S., Athol, Mass.

**Telephones.** (Supplies, Equipment.)  
 Piedmont Electric Co., Asheville, N. C.  
 Western Electric Co., New York, N. Y.

**Telephone Service.**  
 American Telephone & Telegraph Co.

**Terminal Warehouse.**  
 Union Terminal Co., Jacksonville, Fla.

**Terra-Cotta.** (Ornamental.)  
 Atlanta Terra-Cotta Co., Atlanta, Ga.  
 Bibb Sewer Pipe Co., Macon, Ga.  
 Maryland Terra-Cotta Co., Baltimore, Md.  
 Pomona Terra-Cotta Co., Pomona, N. C.  
 Southern Building Material Co., Norfolk, Va.  
 Stevens' Sons Co., H., Macon, Ga.

**Threshers.**  
 Cardwell Machine Co., Richmond, Va.

**Tiering Machines.** (Portable.)  
 Economy Engineering Co., Chicago, Ill.

**Tile (Drain).**  
 Bibb Sewer Pipe Co., Macon, Ga.  
 Gray Concrete Co., Thomasville, N. C.  
 Oconee Brick & Tile Co., Milledgeville, Ga.

**Tramway.** (Overhead.)  
 Spidel, J. G., Reading, Pa.

**Tramway.** (Wire Rope.)  
 Broderick & Bascom Rope Co., St. Louis, Mo.  
 Caldwell & Sons Co., H. W., Chicago, Ill.  
 Link-Belt Co., New York (Philadelphia), Pa.  
 Waterbury Co., New York, N. Y.

**Transformers.**  
 Crocker-Wheeler Co., Ampere, N. J.

**Trench Excavator.** [See Excavator (Trench).]

**Trucks.** (Dry Kiln.)  
 Moore Dry Kiln Co., L., Jacksonville, Fla.

**Trucks.** (Elevating for Factories, etc.)  
 National Scale Co., Chicopee Falls, Mass.

**Trucks.** (Motor, Gasoline.)  
 White Co., The Cleveland, O.

**Trucks.** (Platform, Freight, Mill, Factory, etc.)  
 Bernstein Mfg. Co., Phila., Pa.  
 Chase Fdry. & Mfg. Co., Columbus, O.

**Trucks.** (Storage Battery Auto.)  
 Westinghouse Machine Co., Pittsburgh, Pa.

**Trucks (Storage Battery)** [For Warehouses & Industrial Plants]  
 Elwell Parker Electric Co., The New York, N. Y.

**Trust Companies.** [See Bankers and Brokers.]

**Tube Well Strainers.**  
 Cook Well Co., St. Louis, Mo.

**Tubes.** (Boiler.)  
 Cincinnati Iron & Steel Co., Cincinnati, O.  
 National Tube Co., Pittsburgh, Pa.

**Tubing.**  
 La Belle Iron Works, Steubenville, O.  
 National Tube Co., Pittsburgh, Pa.  
 Youngstown Sheet & Tube Co., Youngstown, O.

**Turbines.** (Hydraulic.)  
 Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
 Davis Foundry & Machine Wks., Rome, Ga.  
 Leffel & Co., James, Springfield, O.  
 Poole Engineering & Mach. Co., Baltimore, Md.  
 Salem Foundry & Machine Wks., Salem, Va.  
 Smith Co., S. Morgan, York, Pa.

**Turbines.** (Steam.)  
 Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
 De Laval Steam Turbine Co., Trenton, N. J.  
 Ft. Wayne Electric Works, Ft. Wayne, Ind.  
 General Electric Co., Schenectady, N. Y.  
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.  
 Terry Steam Turbine Co., Hartford, Conn.  
 Western Electric Co., New York, N. Y.  
 Westinghouse Machine Co., Pittsburgh, Pa.

**Turn Buckles.**  
 Broderick & Bascom Rope Co., St. Louis, Mo.

**Wall Ties.**  
 Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.  
 Page Woven Wire Fence Co., Adrian, Mich.

**Warehouse.** (Storage.)  
 Union Terminal Co., Jacksonville, Fla.

**Washers.** (Ore and Phosphate.)  
 Bailey-Lobby Co., Charleston, S. C.  
 Cameron & Barkley Co., Charleston, S. C.  
 McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

**Washers and Rivets.** [See Bolts, Nuts, Rivets, Studs and Washers.]

**Watchman's Clocks.**  
 Watchman's Clock & Supply Co., New York, N. Y.

**Water Filters.** (See Filters, Water, etc.)

**Waterproofing.** (For Brick Work.)  
 Barrett Mfg. Co., Philadelphia, Pa.  
 McCormick Waterproof Portland Cement Co., St. Louis, Mo.  
 Standard Paint Co., The New York, N. Y.

**Waterproofing.** (For Concrete.)  
 Barrett Mfg. Co., Philadelphia, Pa.  
 McCormick Waterproof Portland Cement Co., St. Louis, Mo.  
 Standard Paint Co., The New York, N. Y.

**Water-Softening Apparatus.** (Purifying.)  
 American Water Softener Co., Philadelphia, Pa.  
 International Filter Co., Chicago, Ill.  
 N. Y. Const. Jewell Filtr'n Co., New York, N. Y.  
 Tucker & Laxton, Charlotte, N. C.

**Water-Wheels.** [See Turbines. (Hydraulic).]

**Water-Works Supplies and Appliances.**  
 American Cast Iron Pipe Co., Birmingham, Ala.  
 American Pipe & Constr. Co., Philadelphia, Pa.  
 Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
 Clark Co., H. W., Mattoon, Ill.  
 Clow & Sons, James B., Chicago, Ill.  
 Coldwell-Wilcox Co., Newburgh, N. Y.  
 Columbian Iron Works, Chattanooga, Tenn.  
 Donaldson Iron Co., Emaus, Pa.  
 Giamorgan Pipe & Foundry Co., Lynchburg, Va.  
 Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
 Layne & Bowler Co., Houston, Tex.  
 Leadite Co., Inc., The Philadelphia, Pa.  
 Lynchburg Foundry Co., Lynchburg, Va.  
 Massillon Iron & Steel Co., Massillon, Ohio.  
 Modern Equipment Co., Savannah, Ga.  
 Pomona Terra-Cotta Co., Pomona, N. C.  
 Salem Fdry. & Machine Works, Salem, Va.  
 Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.  
 Standard Spiral Pipe Works, Chicago, Ill.  
 Stevens' Sons Co., H., Macon, Ga.  
 U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
 Warren Foundry & Machine Co., New York, N. Y.  
 Washburn Co., A. H., Charlotte, N. C.  
 Wood & Co., H. D., Philadelphia, Pa.

**Welding Plants.** (Oxy-Acetylene.)  
 Milburn Co., Alex. N., Baltimore, Md.

**Well Contractors.** (Oil, Artesian, etc.)  
 Columbia Pump & Well Co., Washington, D. C.  
 Cook Well Co., The St. Louis, Mo.  
 Hughes Specialty Well Drill Co., Charleston, S. C.  
 Lee Bros. & Greer, Spartanburg, S. C.  
 Stothoff Bros., Farmington, N. J.  
 Sydnor Pump & Well Co., Inc., Richmond, Va.

**Well Tools and Supplies.**  
 Cook Well Co., The St. Louis, Mo.  
 Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
 Williams Bros., Rhaca, N. Y.

**Wheels and Axles.**  
 Electric Wheel Co., Quincy, Ill.  
 Oliver Mfg. Co., W. J., Knoxville, Tenn.

**Wheelbarrows and Carts.**  
 Sterling Wheelbarrow Co., Milwaukee, Wis.  
 Syracuse Chilled Plow Co., Syracuse, N. Y.

**Wheels.** (Steel and Steel Tired.)  
 Carnegie Steel Co., Pittsburgh, Pa.

**Window Frames and Sash.** (Fireproof.)  
 Detroit Steel Products Co., Detroit, Mich.  
 Edwards Mfg. Co., The Cincinnati, O.  
 Voigtman & Co., Chicago, Ill.

**Window Guards.** (Wire.) [See Wire Goods.]

**Windmills.**  
 Caldwell Co., Inc., W. E., Louisville, Ky.  
 Columbia Pump & Well Co., Washington, D. C.

**Wire.** (Barbed Wire, etc.)  
 Roebbing's Sons Co., John A., Trenton, N. J.  
 Youngstown Sheet & Tube Co., Youngstown, O.

**Wire.** (Signal.)  
 American Steel & Wire Co., Chicago, Ill.  
 Safety Insulated Wire & Cable Co., New York, N. Y.

**Wire Cloth.** (Iron, Steel, Brass, etc.)  
 Aronstam Co., L., Columbia, S. C.  
 Caldwell & Sons Co., The H. W., Chicago, Ill.  
 Meyers Mfg. Co., The Fred J., Hamilton, O.  
 New Jersey Wire Cloth Co., Trenton, N. J.

**Wire Goods.**  
 Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
 Cincinnati Mfg. Co., Cincinnati, O.  
 Dorr Wire & Iron Works, Louisville, Ky.  
 Dufur & Co., Baltimore, Md.  
 Dufur, Baggett & Co., Baltimore, Md.  
 Meyers Mfg. Co., The Fred J., Hamilton, O.  
 New Jersey Wire Cloth Co., Trenton, N. J.

**Wire Netting.**  
 American Steel & Wire Co., Chicago, Ill.  
 New Jersey Wire Cloth Co., Trenton, N. J.

**Wire Rope.**  
 Broderick & Bascom Rope Co., St. Louis, Mo.  
 Roebbing's Sons Co., John A., Trenton, N. J.  
 Waterbury Co., New York, N. Y.  
 Williamsport Wire Rope Co., Williamsport, Pa.  
 Youngstown Sheet & Tube Co., Youngstown, O.

**Wire Rope Clips.**  
 American Hoist & Derrick Co., St. Paul, Minn.  
 American Steel & Wire Co., Chicago, Ill.  
 Broderick & Bascom Rope Co., St. Louis, Mo.

**Wires and Cables.** (Insulated.)  
 American Steel & Wire Co., Chicago, Ill.  
 Safety Insulated Wire & Cable Co., New York, N. Y.

**Wood Blocks.** (For Paving and Factory Floors.)  
 U. S. Wood Preserving Co., New York, N. Y.

**Wood Distillation.**  
 Struthers-Wells Co., Warren, Pa.

**Wood Pipe.** (For Water, etc.)  
 Wyckoff & Son Co., A., Elmira, N. Y.

**Wood.** (Preservative.)  
 Barrett Mfg. Co., Phila., Pa.

**Woodworking Machinery.**  
 Gibbs Mach. Co., Inc., Columbia, S. C.  
 Kline, Lewis T., Alpena, Mich.  
 Lane Mfg. Co., Montpelier, Vt.  
 Shimer & Sons, Samuel J., Milton, Pa.  
 Sidney Tool Co., The Sidney, Ohio.  
 Smith Machine Co., H. B., Smithville, N. J.

**Yarn.** (Tarred Sial.)  
 Columbian Rope Co., Auburn, N. Y.  
 Plymouth Cordage Co., North Plymouth, Mass.

## Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.  
 Advertising copy not requiring proof must reach us one week in advance of publication day.  
 When proof is required, two weeks in advance.  
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 Four columns to page.

### TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.  
 Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

**Tile (Interior)**  
 Amer. Enam. Brick & Tile Co., New York, N. Y.  
 P & F Tile Co., Birmingham, Ala.

**Tile.** (Mantel and Promenade.)  
 Hood Brick Co., B. Miffin, Atlanta, Ga.

**Tile.** (Rubber.)  
 Goodyear Tire & Rubber Co., Akron, O.

**Tile.** (Structural.)  
 Bibb Sewer Pipe Co., Macon, Ga.  
 Oconee Brick & Tile Co., Milledgeville, Ga.

**Timbers.** (Creosoted.)  
 American Creosote Works, New Orleans, La.  
 Republic Creosoting Co., Indianapolis, Ind.

**Tin and Terne Plates.**  
 American Sheet & Tin Plate Co., Pittsburgh, Pa.

**Tires.** (Rubber.)  
 Goodyear Tire & Rubber Co., Akron, O.

**Tobacco Machinery.**  
 Buckeye Iron & Brass Works, Dayton, O.  
 Cardwell Machine Co., Richmond, Va.

**Tools.** (Machinists.)  
 American Die & Tool Co., Reading, Pa.  
 Holland Mfg. Co., Erie, Pa.  
 Morse Twist Drill & Mach. Co., New Bedford, Mass.

**Tools.** (Mechanical.)  
 Starrett Co., L. S., Athol, Mass.

**Tools.** (Pneumatic.)  
 Amer. Compressor & Pump Co., Baltimore, Md.  
 Chicago Pneumatic Tool Co., Chicago, Ill.  
 Independent Pneumatic Tool Co., Chicago, Ill.

**Tools.** (Tinners.)  
 Danzer Metal Works, Hagerstown, Md.

**Torches.**  
 Wall Mfg. Supply Co., P., Allegheny, Pa.

**Towers.** (Electric Transmission.)  
 American Bridge Co. of New York, N. Y.  
 Scaife & Sons Co., Wm. B., Pittsburgh, Pa.

**Towers.** (Steel and Wood.)  
 Caldwell Co., Inc., W. E., Louisville, Ky.  
 Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.  
 Chicago Bridge & Iron Works, Chicago, Ill.  
 Cole Mfg. Co., R. D., Newnan, Ga.  
 Columbia Pump & Well Co., Washington, D. C.  
 Des Moines Bridge & Iron Co., Des Moines, Ia.  
 Memphis Steel Const. Co., Memphis, Tenn.  
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

**Track Material.** (Steam & Industrial Railroads.)  
 Conley Frog & Switch Co., Memphis, Tenn.

**Traction Engines.**  
 Fairbanks-Morse & Co., Atlanta, Ga.  
 Farquhar Co., Ltd., A. B., York, Pa.  
 Heer Engine Co., Portsmouth, O.  
 Holt Mfg. Co., The Peoria, Ill.  
 Huber Mfg. Co., The Marion, O.

**Turntables.**  
 American Bridge Co., New York, N. Y.  
 Easton Car & Construction Co., Easton, Pa.  
 Virginia Bridge & Iron Co., Roanoke, Va.

**Twine.**  
 Columbian Rope Co., Auburn, N. Y.  
 Intern'l Cotton Mills, New York, N. Y.  
 Plymouth Cordage Co., North Plymouth, Mass.

**Unions.**  
 Dart Mfg. Co., E. M., Providence, R. I.  
 National Tube Co., Pittsburgh, Pa.

**Vacuum Cleaning Apparatus.**  
 King Co., F. E., Norfolk, Va.  
 United Electric Co., The Canton, O.

**Valves.**  
 Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
 Columbian Iron Works, Chattanooga, Tenn.  
 Erick Co., The Waynesboro, Pa.  
 Giamorgan Pipe & Fdry Co., Lynchburg, Va.  
 Ide & Sons, A. L., Springfield, Ill.  
 Jenkins Bros., New York, N. Y.  
 Lunkensheimer Co., The Cincinnati, O.  
 National Tube Co., Pittsburgh, Pa.  
 Powell Co., Wm., Cincinnati, O.  
 Pittsburgh Valve Fdry. & Const. Co., Pittsburgh, Pa.  
 York Mfg. Co., York, Pa.

**Valve Boxes.**  
 Clark Co., H. W., Mattoon, Ill.

**Varnish.**  
 Berry Bros., Detroit, Mich.  
 Murphy Varnish Co., Newark, N. J.

**Veneer Machines.**  
 Titus, E. E., Petersburg, Va.

**Ventilating Apparatus.** (Engineers' and Contractors.)  
 Buffalo Forge Co., Buffalo, N. Y.  
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.

**Vises.**  
 Holland Mfg. Co., Erie, Pa.

**Wagons.** (Dump.)  
 Troy Wagon Works Co., The Troy, O.  
 Western Wheeled Scraper Co., Aurora, Ill.

**Wainscoting.** (Tile.)  
 Northcross Mantel Co., W. J., Memphis, Tenn.

**Wall Coping.**  
 Southern Sewer Pipe Co., Birmingham, Ala.

**Wall Plugs.** (Galvanized.)  
 Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.



Albion and Root Mfg. Co., Inc. 9  
Acme Knitting Machine & Needle Co. 10  
Affiliated Manufacturers Co. 109  
Alabama Power Co. 88  
Albany Lubricating Co. 11  
Alberberg Pump & Condenser Co. 108  
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